3dcreative

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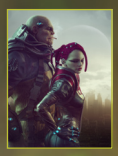
Issue 067 March 2011

Interview
Alexis Wanneroy



The Gallery
Filip Novy
Jesse Sandifer, Jack Zhang
& more!

Project Overview
"Wal-Mart 2161"
by Brano Florian

Cover image by Jonas Skoog

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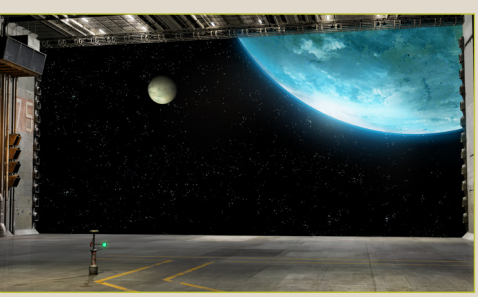
ZBRUSH MONSTERS

JONAS SKOOG WRAPS UP THIS EPIC SERIES WITH HIS JUNGLE CHARACTER CREATION



Creating the Celeritas

Bringing us the final chapter of this great series **Djordjie Jovanovic**, **Luigi Terza** & **Tamás Gyermán** show us how to texture our Spaceship.

Photoshop Post Effects

This month **Richard Tilbury** will focus on creating a space environment that could make a suitable backdrop to a sci-fi scene.

Unreal Games Engine Tutorial

Andrew Finch really starts to bring the environment to life by adding accessories and features to our **Italian Courtyard**.

Editorial

I can't believe February has come and gone so quickly! The March issue of 3DCreative is here and as always is brimming with new and fascinating content. You may notice on our copyright information page that we can happily announce that this year we will be featuring a series by a master of 3D, Marek Denko. Now there is something to look forward to!

So we know the future is bright, but what about the present? Well the present is looking great! We will kick things off this month by talking about this month's interview, which is with Dreamworks employee Alexis Wanneroy. Alexis has worked on some huge projects, which are actually some of my favourite animated movies. You would find his name in the credits for Kung Fu Panda, Flushed Away, Bee movie and How to Train your Dragon. I am sure that there are hundreds of you out there who would love an insight into working for a huge studio, well this is your chance!

This issue see's the final instalment of our Creating the Celeritas tutorial series. I hope you have enjoyed the series. I am looking forward to seeing all of the original spaceships that I am sure you have been modeling. This issue deals with texturing and post production and again we have Djordje Jovanovic in 3ds Max, Luigi Terzi in Maya and Tamás Gyermán in Cinema 4D. Next month we start a new multi software series called Feature Modeling. If you are interested in modeling characters this one is for you.

Richard Tilbury will continue his fantastic Photoshop Post Effects series this month by showing us how to create a space scene using only Photoshop. If you are creating stills this series is a must have! There are some great tips in this one that will save you hours of rendering time, and leave you with some really great work.

I really hope you have been following our Unreal games engine tutorial. Maybe at some point in the future one or two of you could send me your game so I can have a go. Andrew Finch has somehow managed to find time in his packed schedule at Codemasters to create another great tutorial for us. In this issue he shows us how he filled his scene with accessories and features.

We say a sad goodbye to our ZBrush Monsters series this month. This has been a great series and all the artists involved have done a superb job of showing us how to create original and interesting monsters. This month Jonas Skoog talks us through the design and creation of his Jungle monster. There is no need for all you ZBrush users to fear though, as next month we will be starting a new ZBrush series called ZBrush Classical Sculpture which I can tell you now is outstanding!

Well I am swiftly running out of space so I will just mention quickly the fantastic making of in this issue by Brano Florian. This image contains some really nice organic and non-organic modeling and some very tidy texturing which makes this making of well worth checking out. We also have fantastic galleries this month featuring work by Filip Novy, Jesse Sandifer, Jack Zhang and Martin Mayer.

As always I hope you enjoy!

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Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!

Setting up your PDF reader

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

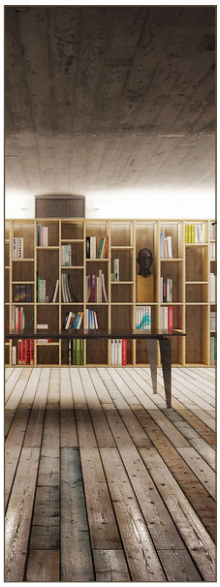
To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

1. Open the magazine in Reader;
2. Go to the View menu, then Page Display;
3. Select Two-up Continuous making sure that Show Cover Page is also selected.

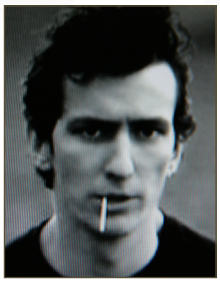
That's it!

Contributing Artists

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com



Djordjie Jovanovic



As the son of a photographer Djordje became involved in visual arts from an early age. After finishing the High School for Design he graduated the University of Arts in Belgrade in the Computer Art and Design course. Currently he works as a freelance 3D artist specializing in a Hard Surface Environment modeling, texturing and Lighting.

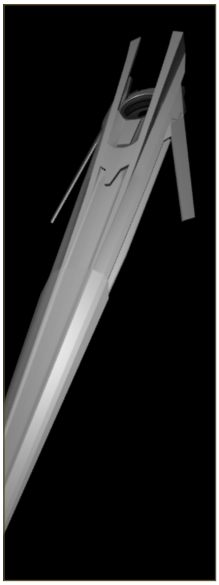
http://djordjejovanovic.com/blog/

djordjexyz@gmail.com

Luigi Terza

Luigi Terzi works and lives in Torino (Italy). After a 10 year experience as illustrator and 3D artist in advertising he recently founded a company with other freelance artists called Blackbox .

gigiterzi@tiscalinet.it



Tamás Gyermán

Tamás Gyermán is a fan of all space and fantasy art. Above all he likes to create spaceships and grand space-scenes. He always uses powerful colors and contrasting lights in his images.

http://www.wmelone.com/cinemorx/index.html

tamas.gyerman@gmail.com

Richard Tilbury

Has had a passion for drawing since being a couple of feet tall. He studied fine art and was eventually led into the realm of computers several years ago. His brushes have slowly been dissolving in white spirit since the late 90s and now, alas, his graphics tablet has become their successor. He still sketches regularly, balancing his time between 2D and 3D.

http:// www.richardtilburyart.com

ibex80@hotmail.com

Andrew Finch

Aged 28 and living in the great city of Birmingham, in the U.K. He has a degree in 3D Animation which inspired his passion for environment art. He now works as an environment artist at Codemasters. He says, "Working in the games industry is exciting: you never know what the next project will be and there's always something new to learn. This helps to keep you creative and grow as an artist." afinchy@googlemail.com

Piracy Notice

March 2011 Update

Many thanks to our customers for your continued support, we really hope you enjoy this month's edition and by purchasing your copy you are helping us to boost quality and content even more. As a result, we have just commissioned the awesome **Marek Denko** to create an exclusive multi-part tutorial series. This is just one example of how supporting us comes around full circle and benefits you, and there'll be plenty more to follow!

If you are reading this from a pirated copy then shame on you! The entire CG community, whether artists, schools, websites, companies etc, needs to support each other to help the industry grow and develop. Taking from each other will only have the opposite effect.

February 2011 Update

3DTotal would like to thank everyone who has purchased the magazine, our anti-piracy efforts are already working and last month we received the most sales to date. With this continued push and support from the community we can make the mag even better. We plan to re-invest the profits back into the magazine and have already started discussions with elite artists to provide you with even more improved content. We're also considering many new wonderful ideas which we will start to reveal over the coming months.

Thanks again for your support.

Previous Announcement
3DTotal.com Partnering With ConceptArt.org

3DTotal is glad to announce that the successful anti-piracy system used on ConceptArt.Org to protect it's video content is now being used to bring an end to piracy of the content produced by the incredible artists who support our magazines, website and tutorials which are enjoyed by so many. This anti-piracy effort has brought to light many of the users who have been pirating content illegally in the ConceptArt.org community and it is now assisting with protecting and enforcing copyrights here.

3DTotal greatly appreciates all our customers and the incredible artists who support this community with products. Piracy has become a major obstacle that must be resolved in order to see the artists who create these works and 3DTotal see success long into the future. Without the content sold here, this community and resource would not be what it is. With the support of our customers we have been able to offer an ever increasing stable of great content at affordable prices. Thank you all for your continued support. We are here to help teach and assist artists worldwide.

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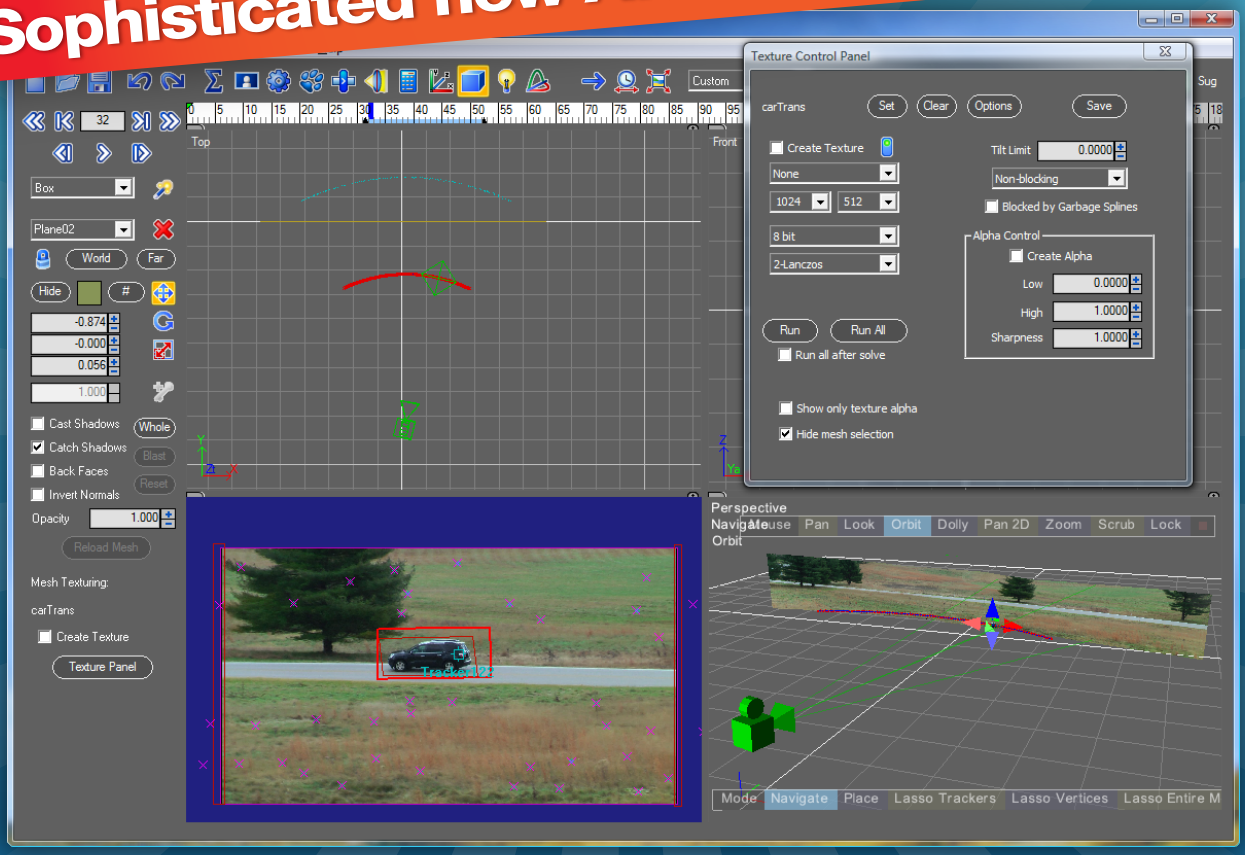

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"By doing character development you have the power of determining what will transform your 3D puppet into a real character."

ALEXIS WANNEROY

Alexis Wanneroy is an animator at DreamWorks, who graduated from the Gobelins animation school in France. His list of credits is impressive and includes *Valiant*, *Bee Movie*, *Kung Fu Panda*, *How to Train Your Dragon* and the forthcoming *Guardians*. We were lucky enough to catch up with Alexis this month to find out more about his experiences, his art and what makes him tick!

INTERVIEW WITH ALEXIS WANNEROY

Hi Alexis and welcome to *3DCreative*! Can you tell us a little about your background and how you became interested in animation?

As with most people from my generation, I grew up watching animated TV series and movies etc. After high school I studied Industrial Design, but kept drawing characters and wanted to do comic books. I went to the Gobelins open school day, where I was blown away by the animation work and quality of the school.

That's when I decided to do animation. Two years later I passed the Gobelins exam and was admitted. My first job was as a character animator on *Valiant*, an animated movie about pigeons during World War II done by Vanguard Animation. After that I chose to open my own studio in the south of France and we'd just got started when DreamWorks called me to say they wanted me to work for them in Los Angeles.

I arrived at DreamWorks in 2006, and since then I've worked as a character animator on F*lushed Away*, *Bee Movie*, *Kung Fu Panda*, *How to Train Your Dragon* and, more recently, *Guardians*, which is due to be released in 2012.

Tell us about your experience on *Valiant* and some of the lessons you learnt with regards to working on animated features?

On *Valiant*, the atmosphere was really cool because the studio was new, the artists were coming from all around the world and there was this great energy around ideas and creativity, which was really motivating. I thought I was going to be a junior animator and would just have regular shots, but it turned out that my work was appreciated and I was given some good shots to animate. I learned how big studios worked, with all the departments being dependent on one another, and how teamwork can make an animation feature film possible. It was an amazing first experience.

What prompted you to go back to France and start your own studio, and what were the main challenges it presented after working in London?

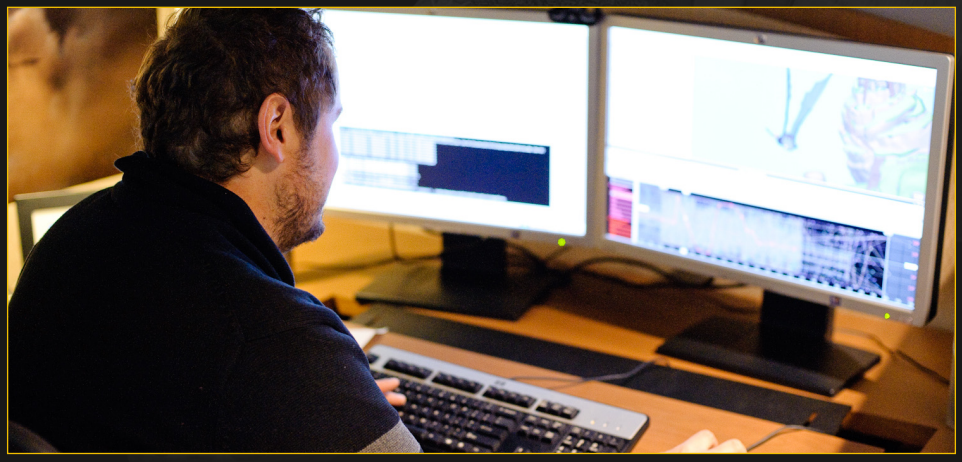
Weather! It felt like a missed opportunity that all the studios in France were concentrated in Paris. As this kind of work can be done from a distance for your client, I wanted to try to develop a CG studio in the south of France. Since then a few companies have tried to relocate to the south, but failed because the industry is so strong in Paris and most artists tend to want to stay in Paris. It is very hard in France to develop studios that can keep artists for years like DreamWorks. As an artist the biggest challenge in creating my company was all the paperwork! Happily my wife was there!

It must have been very exciting to be contacted by a company such as DreamWorks and offered a job. Was it a difficult decision to abandon your ambitions for Kiwi-Production?

It was a really hard decision to make. Especially after a year of hard work to get Kiwi started, but an opportunity like DreamWorks is not something that you can put aside without regret. I had to go work for DreamWorks because of all the opportunities it was going to offer. At first I thought I was going to stay a year to see the pipeline of a big studio and the way they worked, but it is such an amazing place to work that I ended up staying [Laughs]. Kiwi was such a fun experience. What I miss from it is that I had the possibility to do some renders, FX, etc... Here at DreamWorks I just do animation, and I miss the diversity.

What do you feel are the most distinctive and stylistic differences between European and American animation?

I think the biggest difference is artistic freedom. In Europe there is a lot more freedom; there isn't the same pressure from marketing and executives to make the movie appealing to all audiences. I think European productions can be broader in terms of story or art direction. Animated movies in the US cost a lot of money so marketing and executives have to make sure that movies appeal to a very broad audience, so animated movies have to stay within a range of not being too stylized with regards to production design and story. Pixar actually impressed me a



lot with *Toy Story 3* by making the story and the characters so adult-oriented. On the other hand, in Europe movies have smaller budgets, which tends to give the artists more freedom.

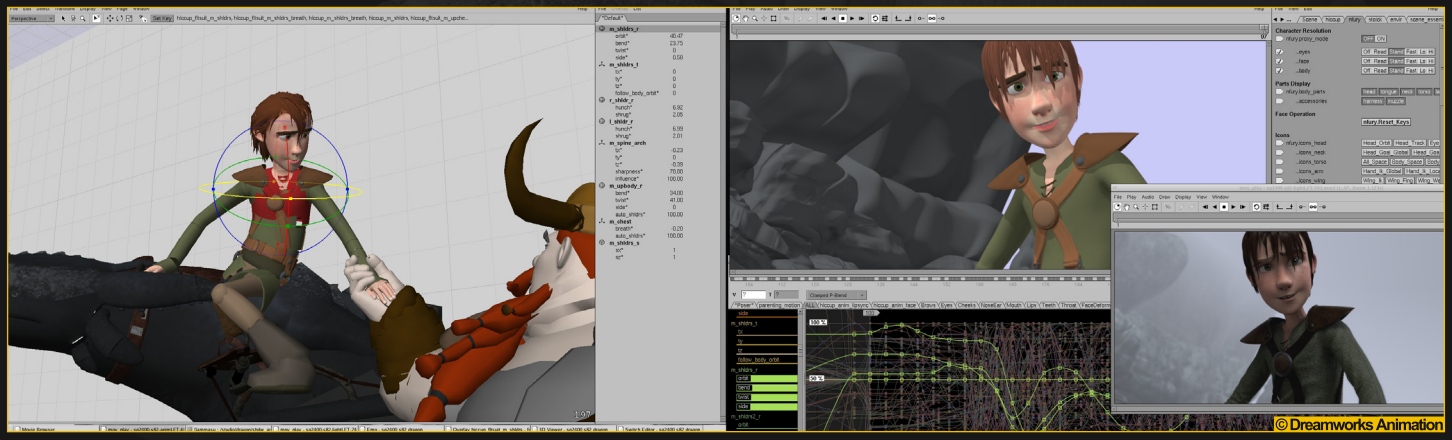
The biggest budget movies in Europe are most of the time financed by big American companies. *Despicable Me* or *Valiant* are the two perfect examples of films being done in Europe, but produced by American companies; you can feel it in the story, production design and characters. Smaller productions like *Triplettes* or the recent *Illusionist* are visually stunning and so different from the rest, thanks to a smaller budget.

You have worked on some major projects over the years, but which have been the most interesting and which have proved to be the more demanding?

How to Train Your Dragon was an amazing project to work on! Chris Sanders and Dean Dublois are for me the best directors I have worked with. They have a sense of animation like no others and they really know how to direct animators.

Right now I am working on *Guardians*, a movie to be released in 2012. It's a lot of character development work and it's also my first time being involved so early on a project so it's very exciting and extremely creative. I get to develop the characters, which to me is the most interesting work I have done so far.

The most demanding I think would have to be *Bee Movie* because of the very short schedule we had and the quality we needed to achieve.



Can you tell us a little more about the role of "character development" and what it entails?
Character development is such a creative process as you get a character in a T-pose and nobody has ever made him move. So you get to decide with the director how the character is, his personality, his way of moving etc. As an animator that's exactly what we want to do; make a character believable and true to what he should be. By doing character development you have the power of determining what will transform your 3D puppet into a real character.

How to Train Your Dragon was actually the first CG movie at DreamWorks with character-based supervision.

This means that every character has a supervisor and this supervisor has a team of animators who are only animating the same character through the movie. So by doing character development you have the ability to provide a starting point for this team.

Of course the character will evolve a lot more after a few months. It's a lot better to have character supervision because it gives a real consistency throughout the movie. That's why on *Dragon* the characters had so much personality and each one of them had a special way of moving/acting.

Do you ever do any 2D animation and do you think it is becoming a redundant practice?
I always wanted to do 2D animation, but fate decided otherwise. I didn't really have the opportunity during my school years to learn it. I love 2D animation; it is as technical as artistic and mastering it is not given to anyone.

Disney tried going back to traditional animation with *The Princess and the Frog*, but it didn't work out very well. The reasons I think were that they don't have the same craftsmanship they back in the day. Students don't learn 2D like they once did and even if they do, most of the time they end up doing 3D when they graduate.

Animation is evolving a lot and to me a project that feels a lot more like 2D is *Tangled*. It is like the old Disney; it looks like a 2D movie and even the character poses feel hand-drawn. At DreamWorks they are coming back to some 2D, but it is integrated in a 3D movie. You'll see it in *Kung Fu Panda 2*. To me Japan is a country where 2D is still a strong living art.

For any aspiring animators out there what advice would you offer them and what do you feel are the key skills necessary for a job in your field?
The key skills for animators are to observe and analyze movements, but also to understand what acting means and its purpose. A great way to observe and analyze is to use video references as much as you can! It really has to be used a certain way I think. For example, never animate the movement you perform while filming yourself – make it as real as possible and then you use the reference to push the poses and movements while animating. When I animate, reference is always part of my process. These are the steps I use when animating: First think about your shot and the purpose of the character in that shot; never rush into animating. Then shoot a video reference, the more natural the better.






Do a lot of takes so you can choose the best. You can also use thumbnails as a base for your video reference. Study what's moving and why. Try to stay true to the reference. Push your poses and make them appealing. Push your timings. Clean your curves, starting from your body and going up the hierarchy (body, spine, neck, etc.). At the end look at your arcs and spacing and polish all your little details.

As for other advice I think a demo reel is always an important thing to have and to get right. When you do a demo reel, always start with your best work. Big companies receive tons of reels and the first 10 seconds or so are the ones that will make them decide if they want to look further or not. As an animator the most important thing to show is acting, but also physical shots.

And finally: never give up your dream. It takes a lot of work and , but I think everybody who is really willing can become a good animator.

Which animated films have impressed you the most and why?

I have too many, but let's go for one recent one from when I was in animation school and one of my all time favorites. The recent one would be

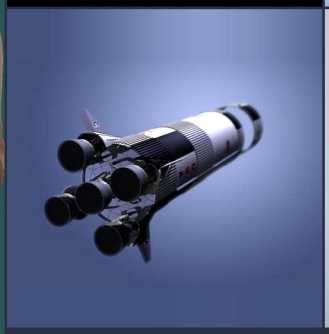
Tangled, not for the story-part which was very simple yet worked, but rather for the quality of animation and the impressive technical aspects. It was like seeing Glen Keane drawings in CG and it was unbelievably well done. The Rapunzel character was so impressive and so consistent. I haven't seen it since, but when I was in school, *Monsters Inc.* came out and I couldn't believe how good it was in every aspect. I loved the story, Boo was the sweetest character ever, and for me is one of the best Pixar films... this movie is special to me since it inspired my whole career. My favorite animated movies are from Miyazaki; my two favorite being *Princess Mononoke* and *My Neighbor Totoro*. The animation is of a stunning and unique quality, as are the worlds he creates which are the most fantastic and twisted of all.

ALEXIS WANNEROY
For more Information contact him at:
alwanneroy@gmail.com

Interviewed by: Richard Tilbury





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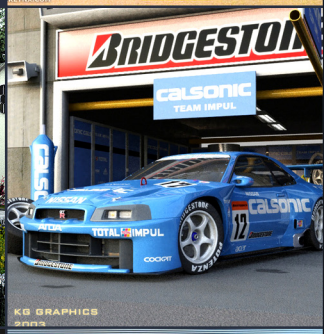



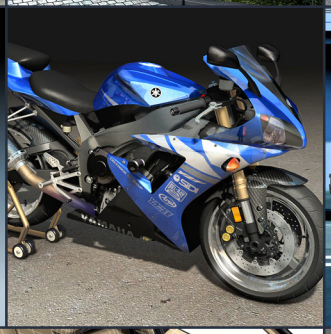
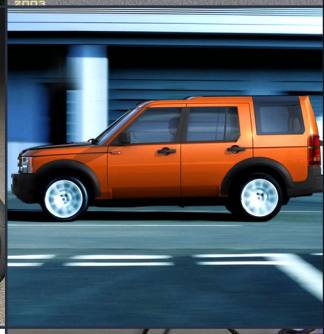

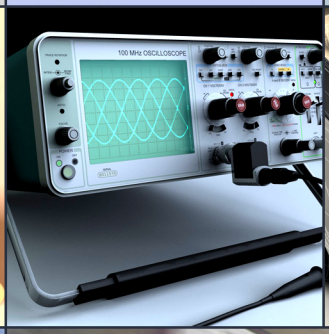




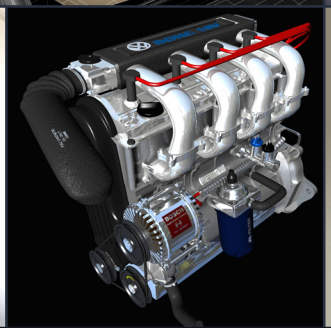


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Daniele Orsetti

Martin Mayer

Jesse Sandifer

Filip Novy

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info@dayno.it
(Above)

HUDSON

Djordje Jovanovic
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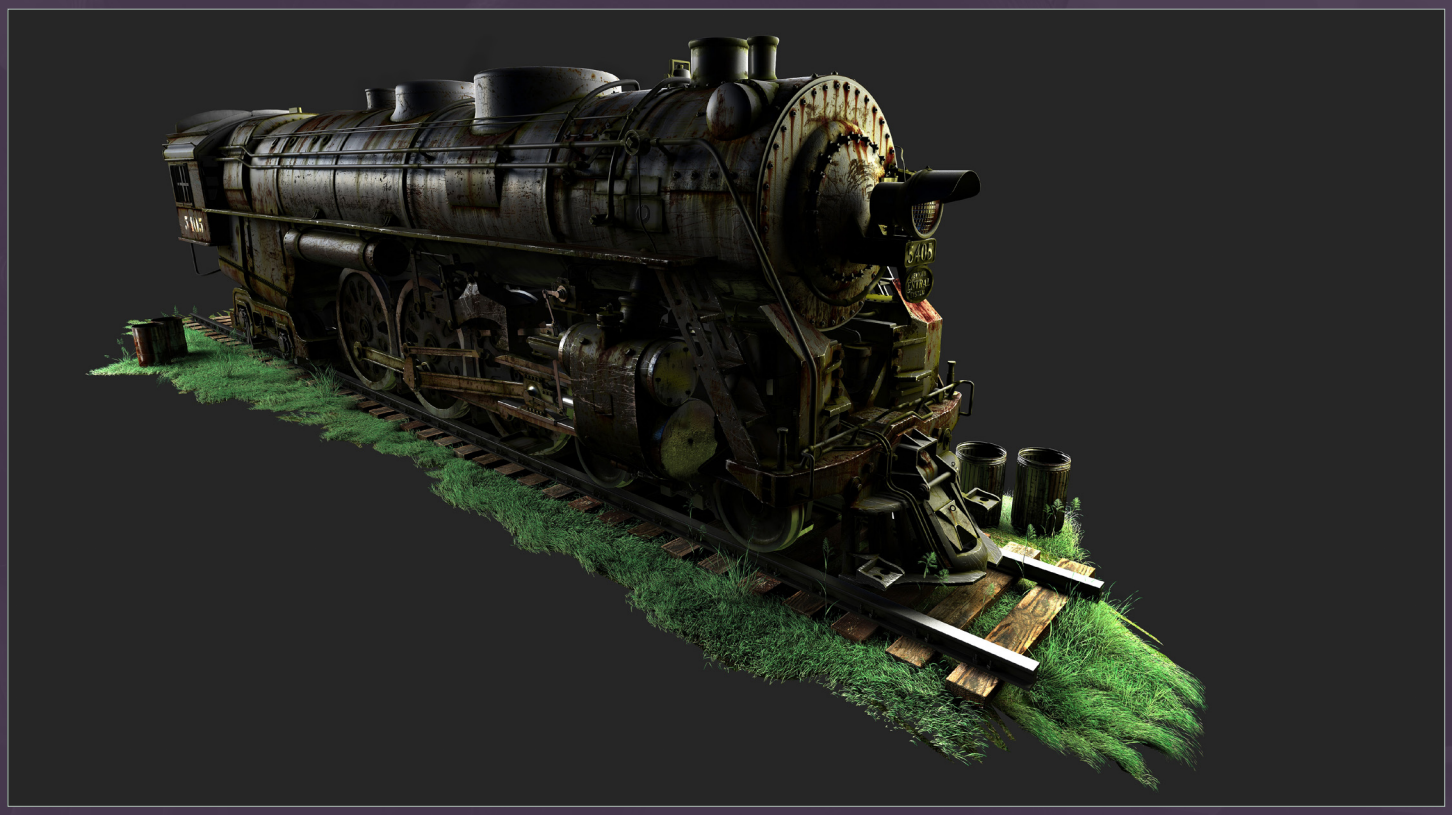
(Below)



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Riccardo Zema

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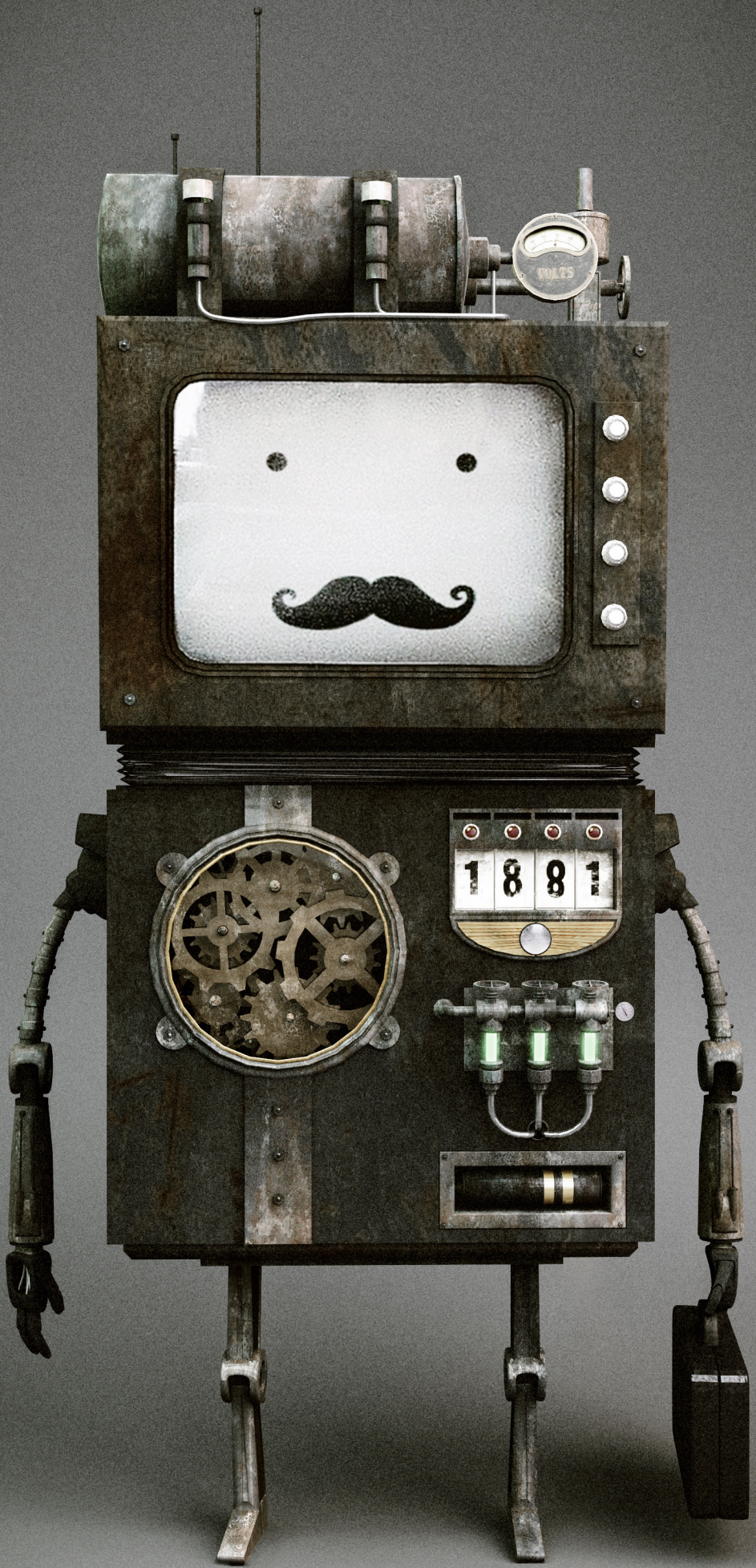

MUSIC LAND

Eugenio Garcaa Villarreal
http://www.d10studio.com.mx
artecnl@hotmail.com
(Right)

Guitar model created by:
Alfredo Rocha “Doncha”

Forrest Tranquility

Martin Mayer

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Just this last job

Filip Novy

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Portrait of Abyssal Princess

David Ferreira
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(Right)

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Plunderer

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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING

FOLLOW THIS TUTORIAL SERIES ON PAGE 074

COMING UP IN THIS ISSUE...

This month our artists will show you how to texture our spaceship.

So if you're interested in seeing the fifth chapter of this great series, please flip to the back of this magazine and enjoy.

CHAPTER 5 - TEXTURING

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.


71
Ready for adventure
Luxology®
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PHOTOSHOP POST EFFECTS

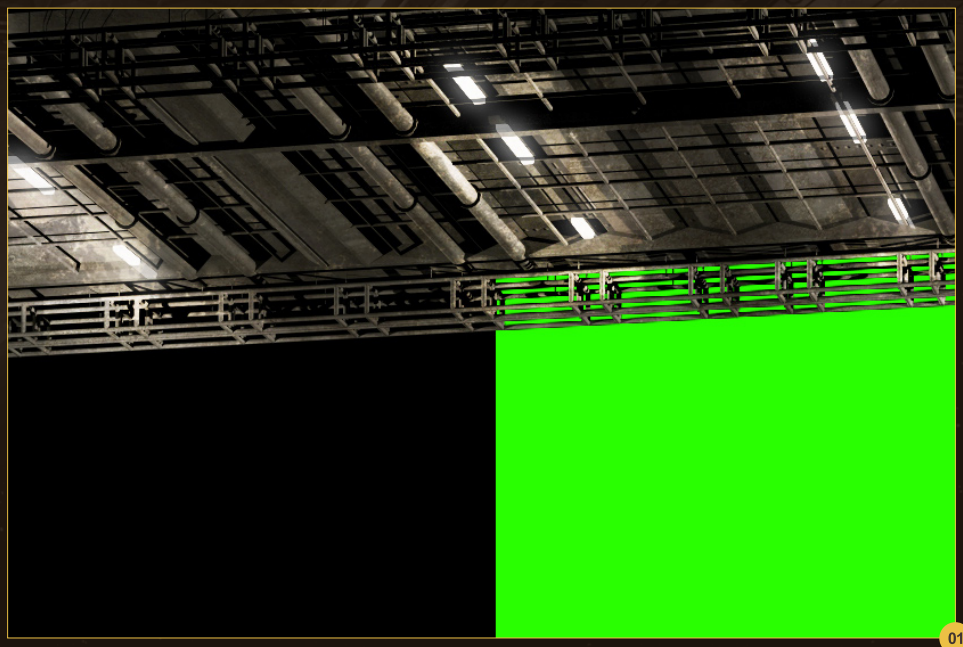
Photoshop is becoming more and more important in the work low of a 3D artist. If you are creating 3D stills, using Photoshop is a great way to complete your image and add effects quickly and effectively. In this tutorial series Photoshop pro Richard Tilbury will be showing how to totally transform an image in Photoshop. We will start each chapter with a textured 3D model. That model will then be put into Photoshop, where Rich will turn it into a polished image. Using Photoshop can be daunting to 3D artists as many see is as a tool for digital painters, but Rich has provided simple, step-by-step techniques and methods that will transform your work flow forever.

CHAPTER 3 - SPACE

Software used: 3ds Max & Photoshop

INTRODUCTION

This tutorial focuses on creating a space environment that could make a suitable backdrop to a sci-fi scene. As this is the main focus I have prepared a space hangar that deliberately leaves a large void that can be filled in Photoshop. We shall begin with some techniques used to create a star field and take a look at the value of using a custom brush. No space scene would feel complete without a planet or two and so we will also look at how to add these, alongside a nebula.



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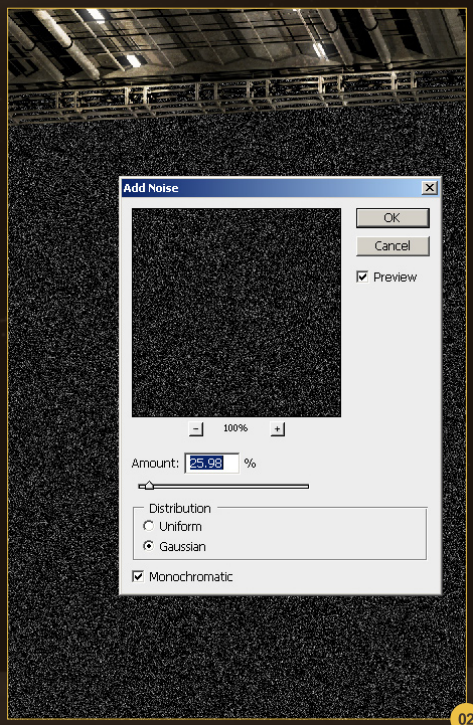

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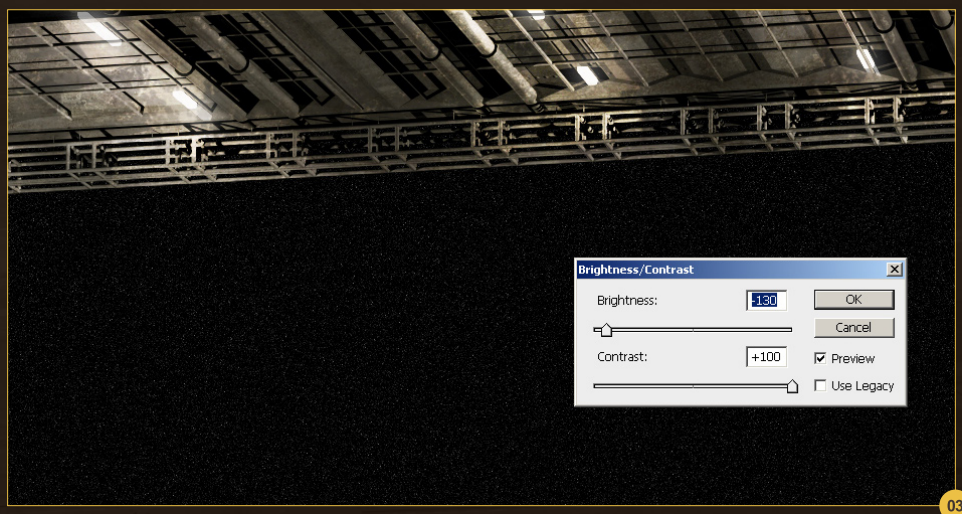
STARS

I made sure to choose a pure black as the environment color within my 3D package, for obvious reasons, and then saved out the image as a TGA in order to quickly select the background, which would be a little tricky along the ceiling edge (**Fig.01**). The difficult aspect to convey with any view into space is a sense of depth as we are looking into a void and as such there are no visible markers by which to gauge distance. Of course there are plenty of stars, but these vary in size and brightness and so can be deceiving. If you had an alignment of similar planets you could have a measuring stick, however this would look unnatural and so we need to vary the size and brightness of the star field in order to create a feeling of depth.

The best method is to use a few layers, but perhaps the quickest and easiest way to start is with the Noise filter. I created a new layer which I filled with black and then went to Filter > Noise and added a value which suited the size of the render (**Fig.02**). This will comprise the farthest stars, after which we will gradually move closer toward the camera.

At the moment the scene has far too many equidistant stars. By increasing the contrast and lowering the brightness it is possible to add some variety and depth (**Fig.03**).

Another useful way of creating stars is by way of a custom brush. Using this approach I began by using a hard round brush and painting in a few random spots of varying sizes (**Fig.04**). This is turned into a brush by making a selection area around the dots and then going to Edit > Define Brush Preset and naming the brush.



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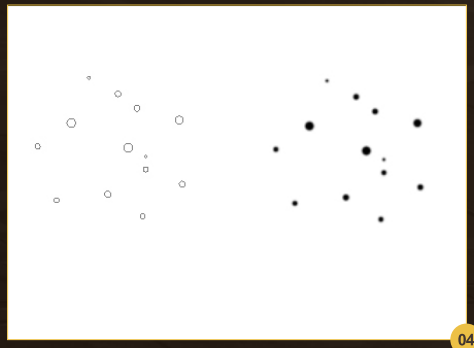

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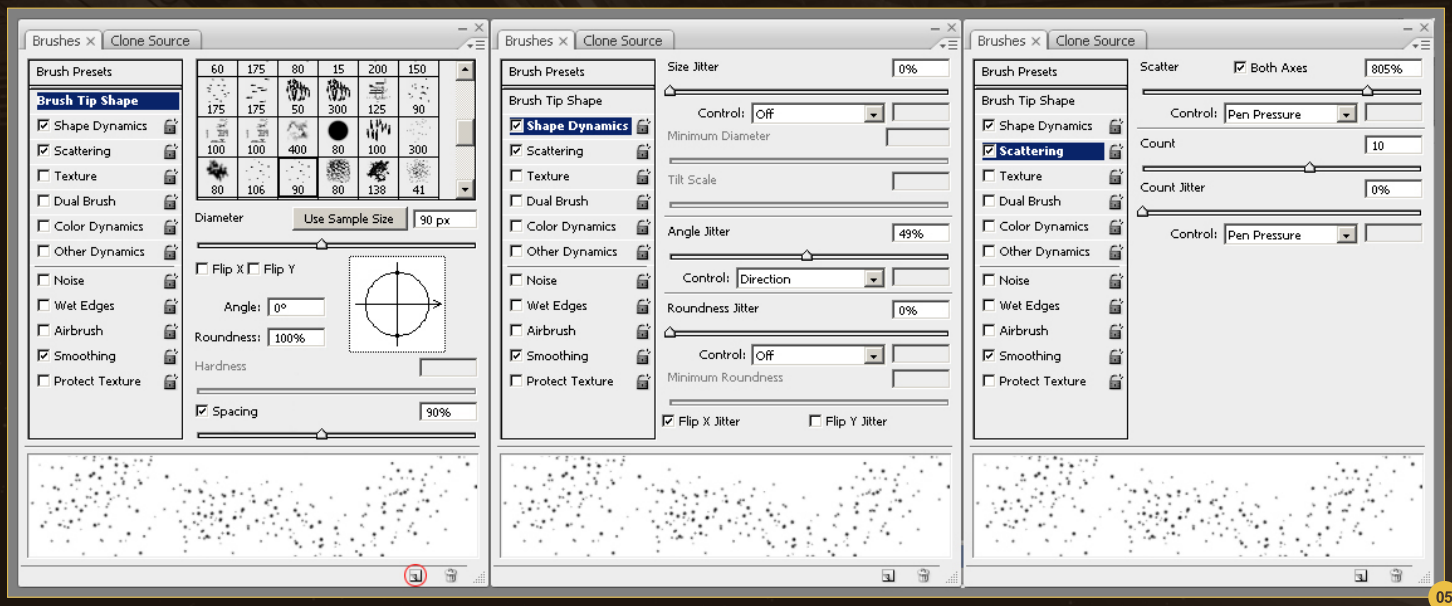

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I then accessed the brush settings and altered the Brush Tip, Shape Dynamics and Scattering, using the parameters seen in **Fig.05**. Once done it is necessary to create a new brush by clicking the small icon ringed in red and saving out the brush once more in order to preserve the new settings.

A new layer can now be created and then the brush used to broadly paint in a larger group of stars. It is best to paint randomly across the designated area and not worry too much about


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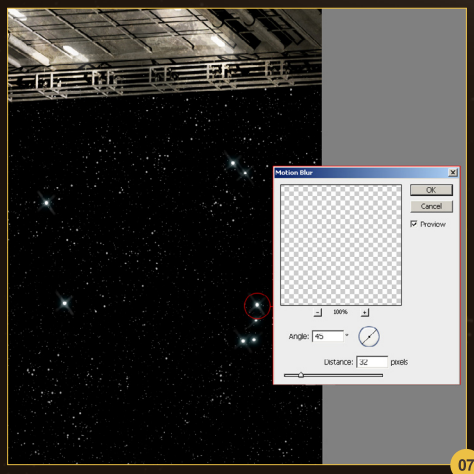

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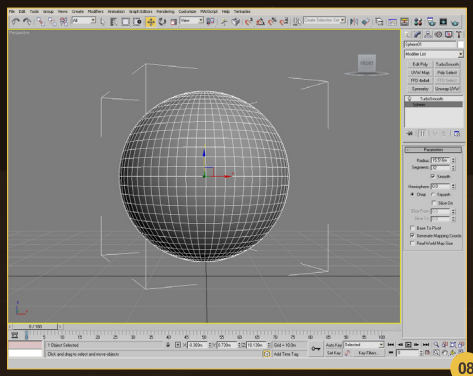
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placement as you can always erase individual stars later and refine the composition. A good practice is to use an eraser with no pressure sensitivity to fully delete certain stars and once you are happy, reduce the opacity in order to vary the brightness – as much depth as possible is the aim here (**Fig.06**).

The third and final set of stars concerns the largest, which appear nearest to the viewer. Using a hard round brush I added in a few dots and then duplicated the layer. Going to Filter > Blur > Motion Blur, I added a blur along a diagonal axis. This layer was then duplicated and flipped horizontally to add the "twinkle" effect (**Fig.07**). By keeping these on a separate layer you have the option of moving, duplicating and re-scaling them without affecting the rest add these alongside a nebula.


09

PLANETS

For the purposes of this tutorial we will have a look at creating planets in two different ways, which should suit most scenarios. First of all we will focus on how to create a distant planet before moving on to a close-up one. As this tutorial is aimed at 3D artists, this technique will seem elementary but very effective. In this instance I am using 3ds Max, but this method can be followed in any 3D package.

I created a standard sphere, ensuring I had the "Generate Mapping Coords" box ticked, and then added some smoothing via Turbosmooth (**Fig.08**). I then found a texture that resembled a planet (**Fig.09**). In my case this was a painted surface, but there are many textures that can work. For example, **Fig.10** shows a stone surface that could be used to describe a desert

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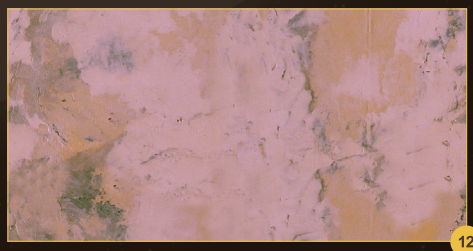

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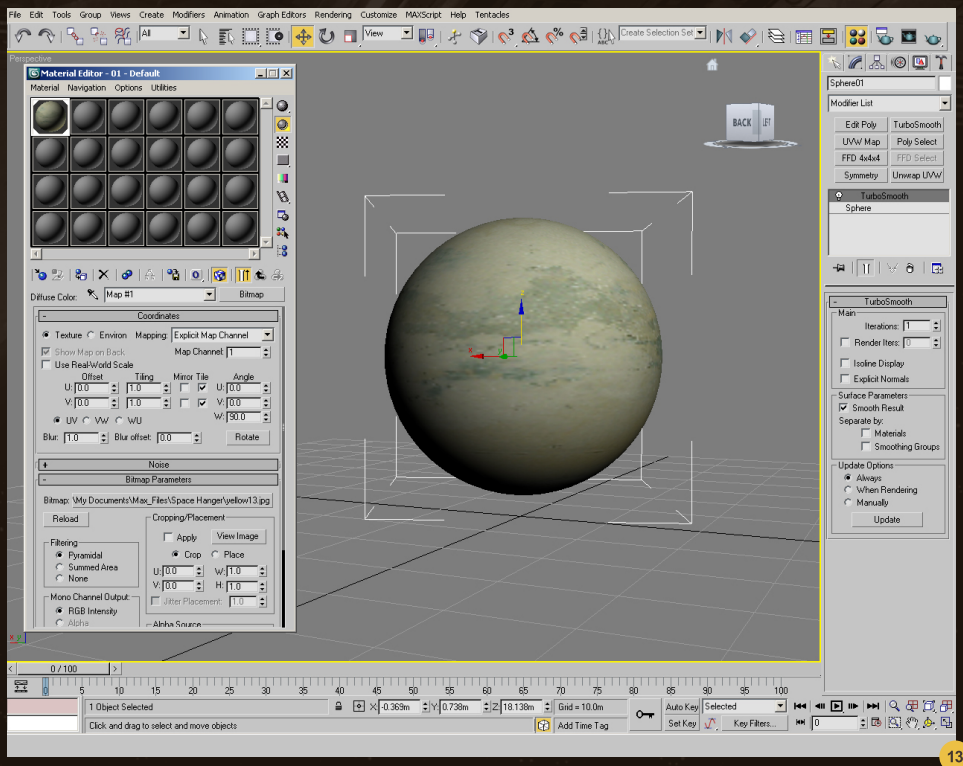

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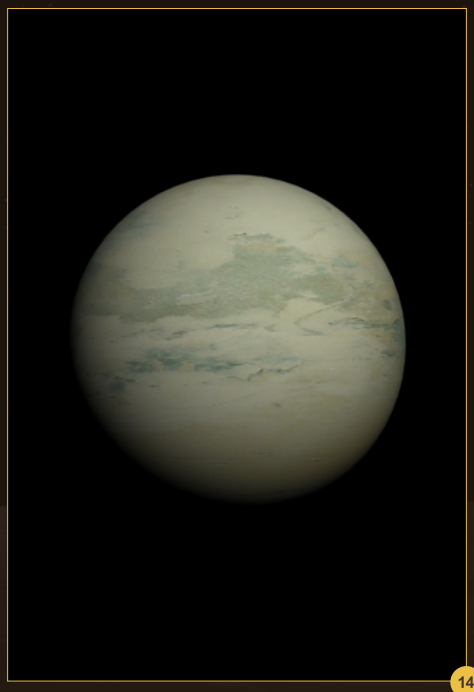
planet and **Fig.11** is a stone wall that could be the basis for a moon. **Fig.12** is similar to the one I chose, which could also work. I suggest picking up your digital camera and taking a stroll – you will be surprised at how many common and everyday surfaces can be transformed into a planet, especially with a macro lens!

I applied the texture directly to my sphere without any UVW mapping and then rotated the angle so that the general flow was horizontal instead of vertical (**Fig.13**). Using the default lighting I hit "Render" and then the planet was ready to be exported (**Fig.14**). If you wish to control the direction and intensity of light then



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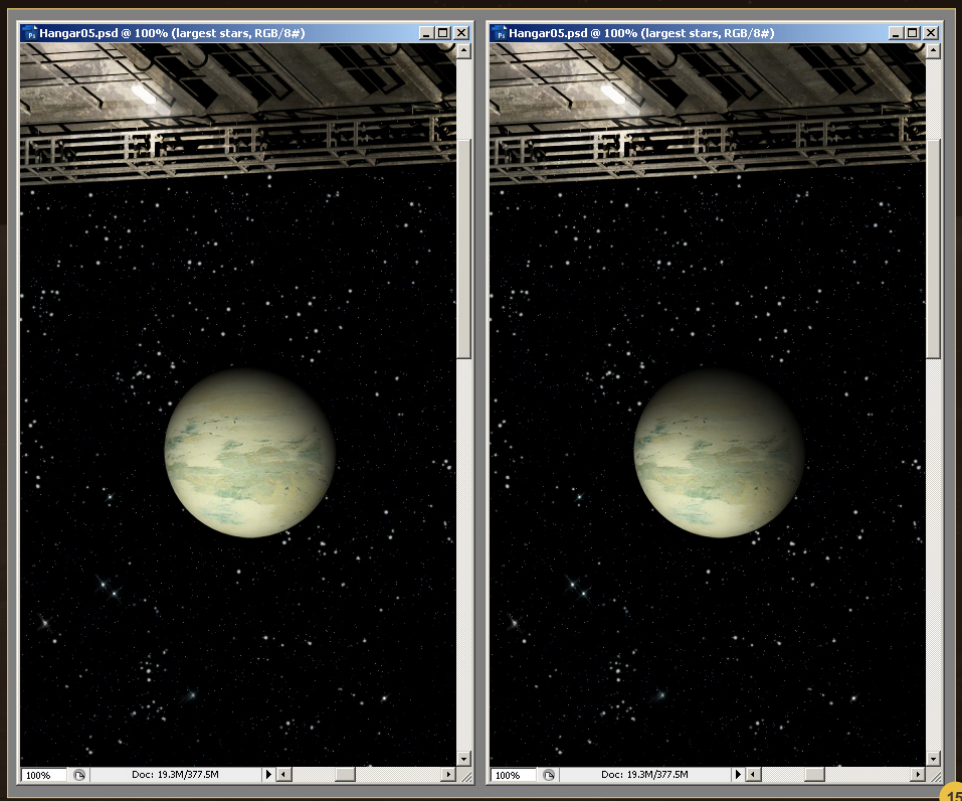

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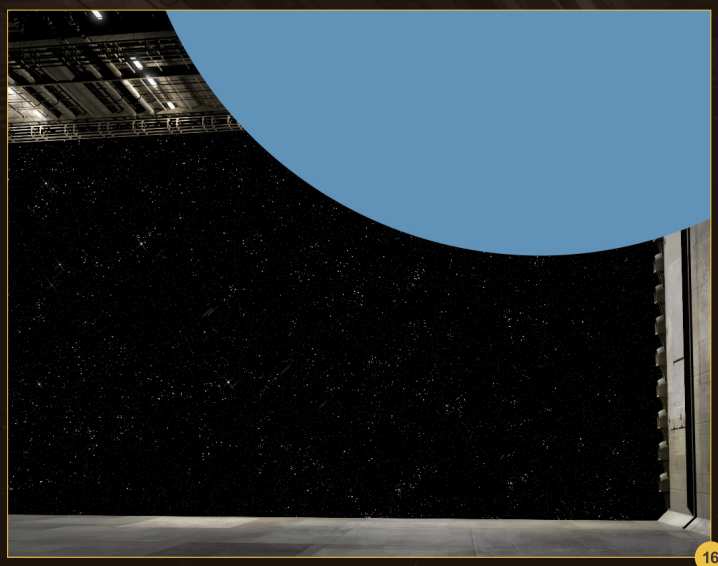
some lights can be added into the scene. Once in Photoshop I duplicated the planet, darkened it slightly and then used a large soft airbrush to delete the lower left, which created a broader shadow across the upper right hemisphere (**Fig.15**).

We shall now add a planet in the foreground, but only show a portion of it due to the proximity and so the first thing to do is to create a large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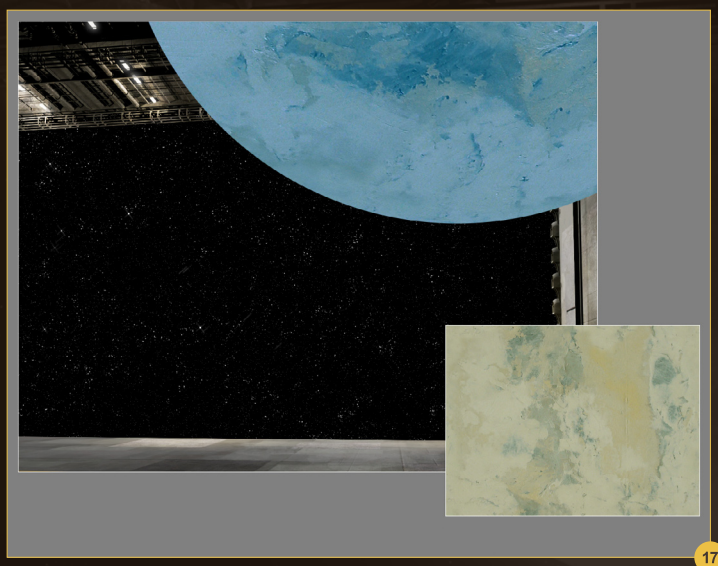
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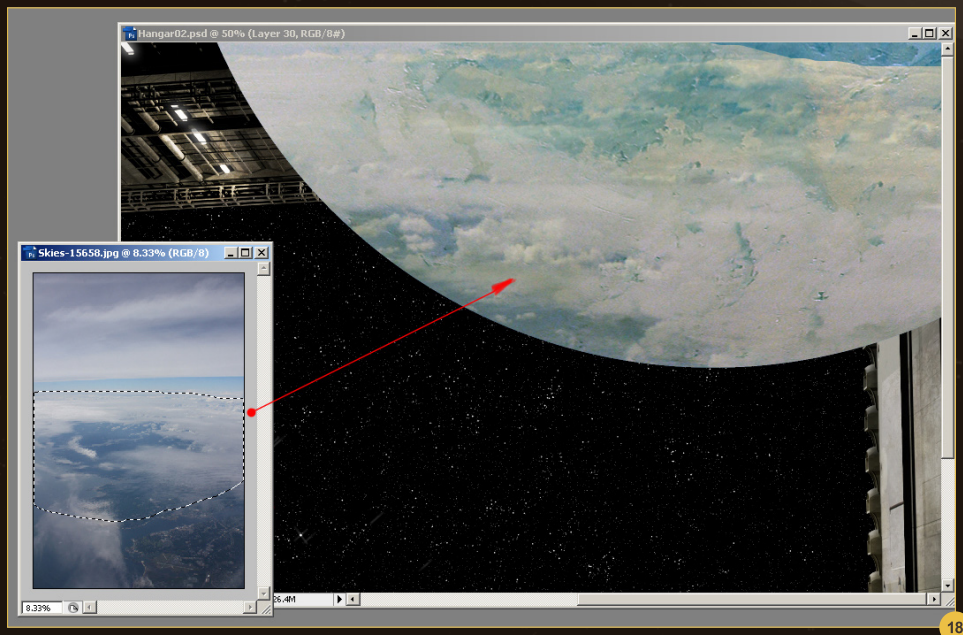
shape using the Elliptical Marquee tool. **Fig.16** shows the position of the planet, which starts its life as a flat block of color. The next phase requires some evidence of land masses and so I again resorted to the same texture, although this is dependent on the type of planet you are interested in creating (**Fig.17**). I decided on a planet similar to Earth, as this is familiar to everyone, and so I needed to show evidence of the clouds that are always visible from space. A great resource that I use regularly is the huge library of free photos at 3DTotal, which can be found here: http://freetextures.3dtotal.com/



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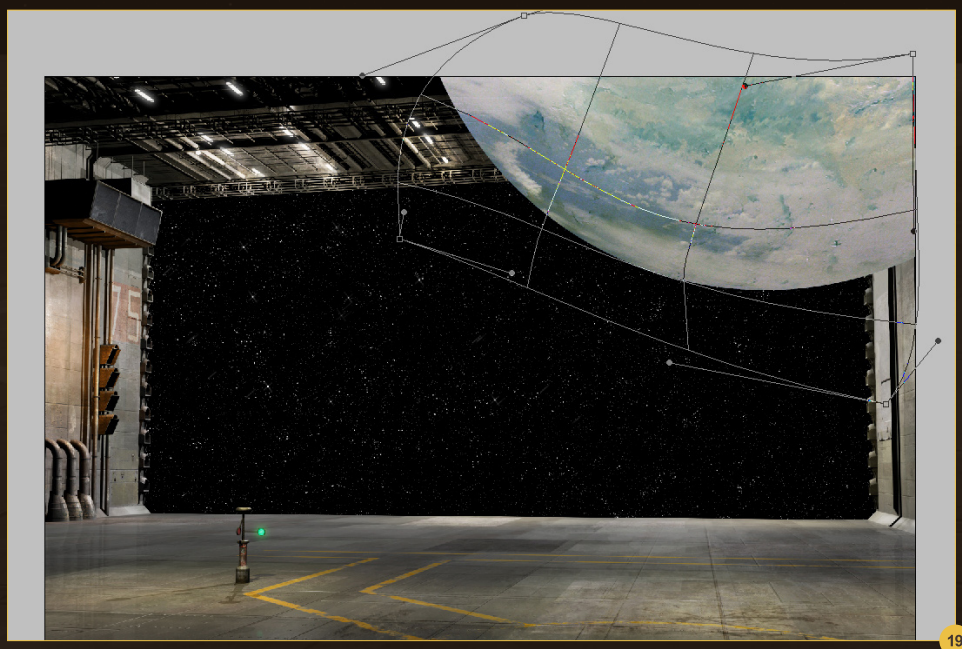
I was looking for a general photo of clouds to wrap around the planet, but found some that were especially suitable as they were photographed from an airplane.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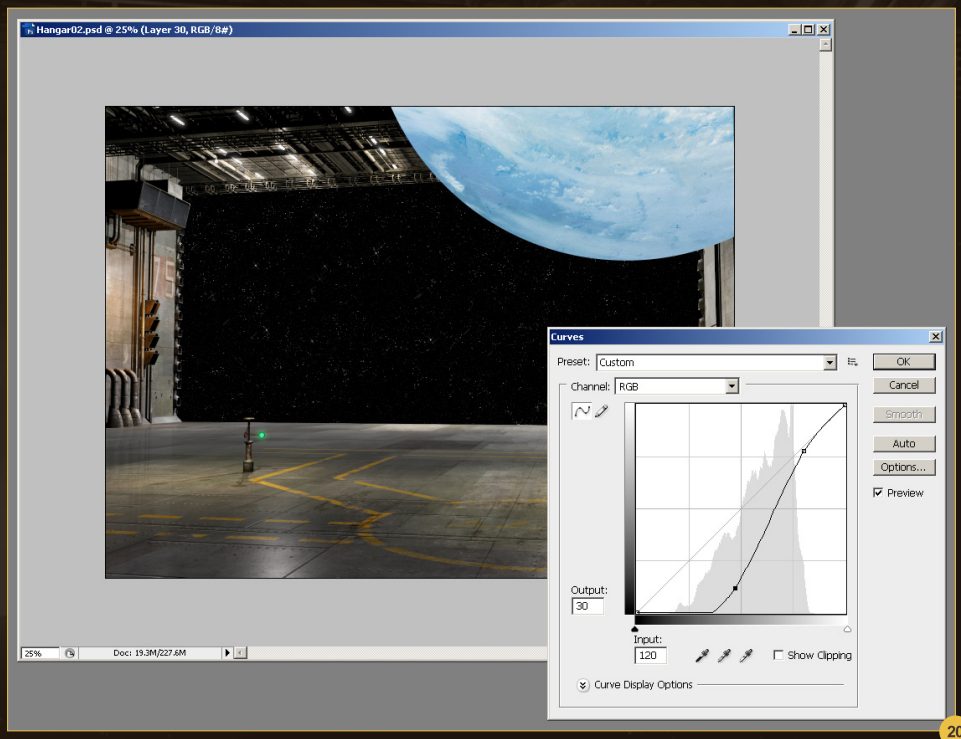
I made a selection area that encompassed the curve and then pasted it into the planet shape. It is important to first select the planet so that when you transfer the clouds you can paste into (Shift + Ctrl + V) the shape and thus create a layer mask. This way you have the freedom to move them around whilst still keeping within the planet outline (**Fig.18**).

Using the Warp tool (Edit > Transform > Warp) I then created some curvature to the clouds so that they echoed the shape (**Fig.19**). I set the blending mode to Screen and altered the Curves



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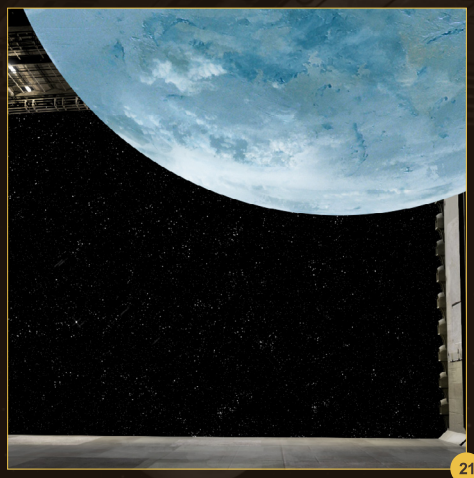
in order to correct the color (**Fig.20**). Using a combination of the Transform tools, Eraser and the Clone Stamp I then edited the cloud composition until I was happy with it (**Fig.21**).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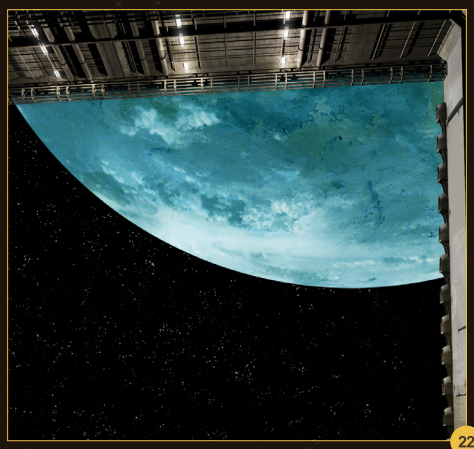
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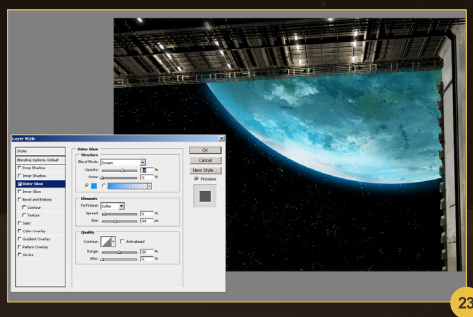
The next step is to flatten all of these components into a single layer and adjust the color balance and contrast using Curves, resulting in a far more vibrant planet (**Fig.22**). You can also see here that I used the alpha channel from the initial TGA to select just the exterior, and then trimmed the planet to fit within the hangar opening.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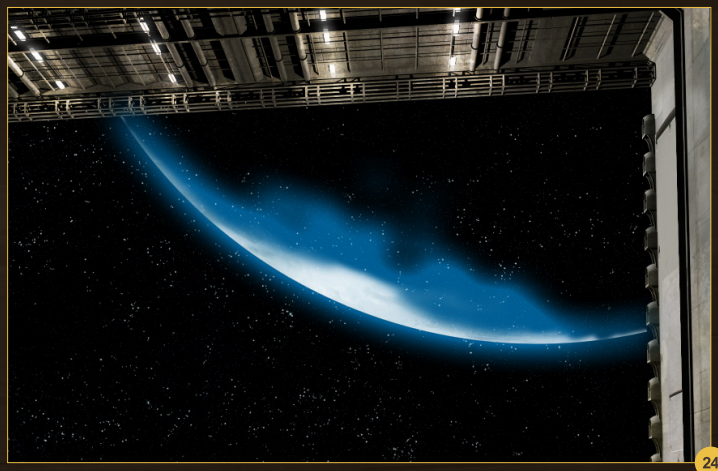
The final stage involves adding an atmosphere, which is achieved using glows. I duplicated the planet layer and then added a glow via Layer > Layer Style > Outer Glow (**Fig.23**).

The glow will naturally follow the entire outline and we only want it along the curved edge so, using a soft eraser, I deleted all but the lower portion which is visible in **Fig.24**. I repeated the procedure except this time I left just the area apparent in **Fig.25** and increased the size of the glow to 250px. The finishing touch is the addition of the thin outer atmosphere, which appears as a blue film around the circumference. To do this I selected the area around the planet and then inverted this, therefore selecting just the planet. I then went to Select > Modify > Expand and entered a value between 5 and 10. Using an appropriate color (blue in this case) I went to Edit > Stroke and entered a value of around 3 before applying some Gaussian Blur to soften it.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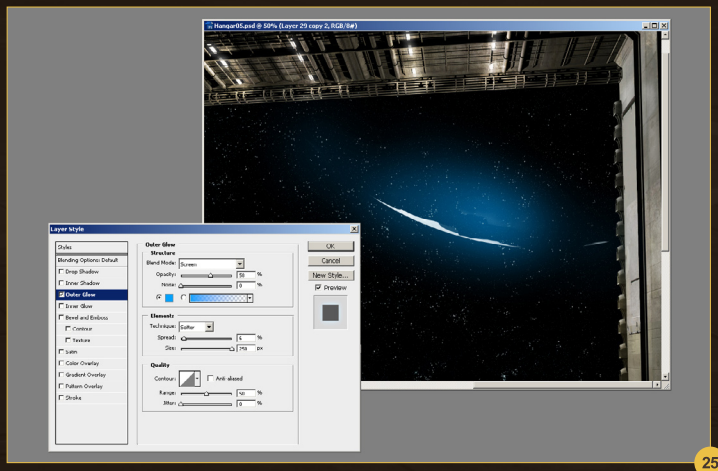
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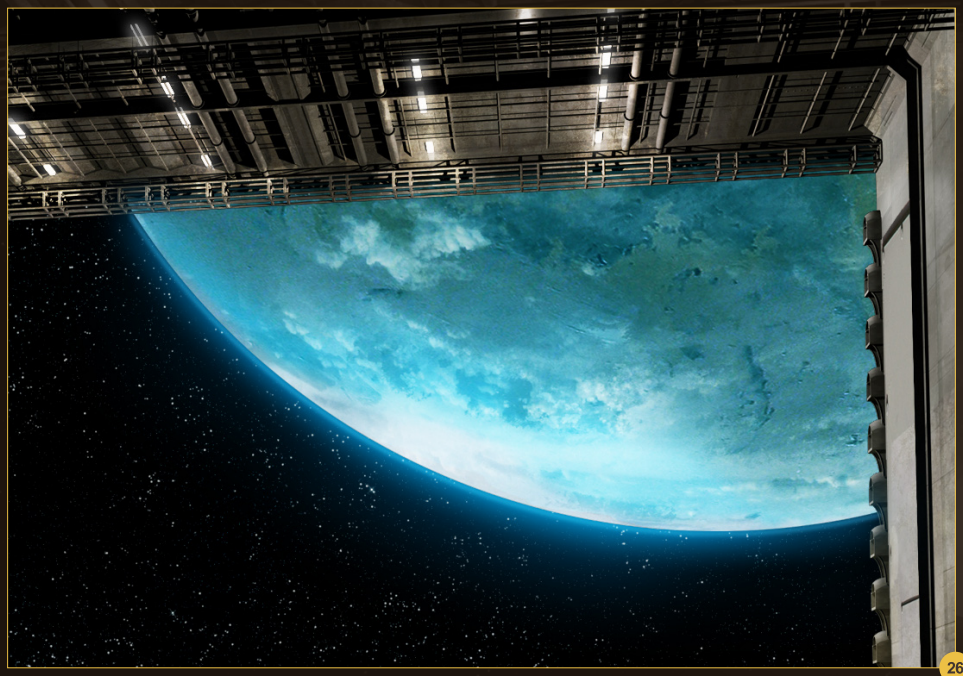
After deleting the line along the two right angles the planet was complete, which you can see here in **Fig.26**.



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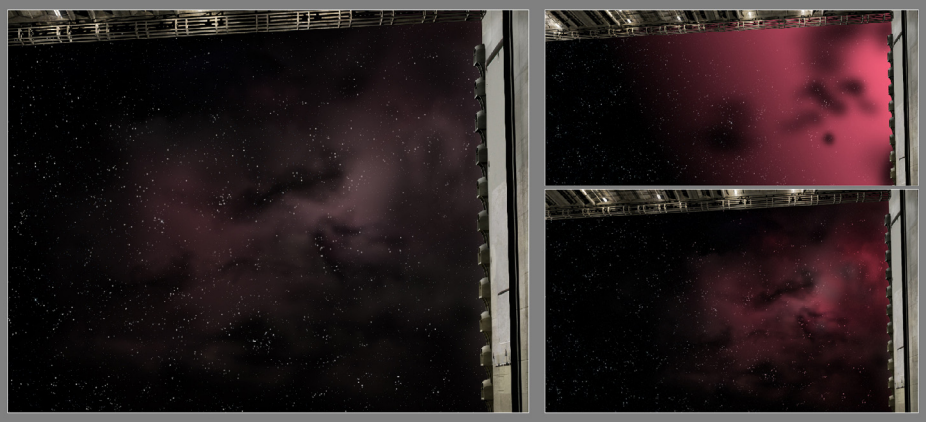
Nebula

The last feature we will add into our scene as an alternative is a nebula, or interstellar cloud, which often appears very psychedelic in color. These vary dramatically, but are certainly a well-known feature of space and worth exploring. The great thing about nebulas is that they do not seem to have any discernible structure and so you can really be creative. The key technique is to separate out your layers and experiment with the blending modes and color schemes, as you will be able to produce a whole array of different clouds from a limited number of layers.



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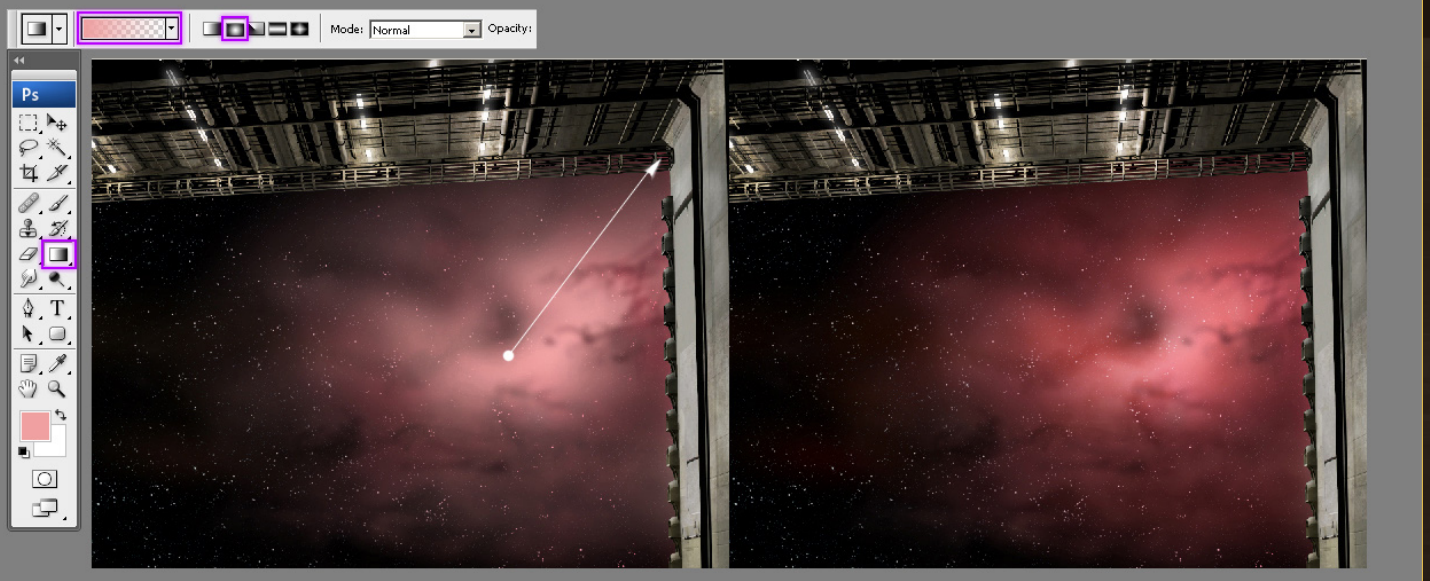
The first layer can be seen on the left in **Fig.27**, which is nothing more than few random strokes using a soft round airbrush with the opacity turned down to around 50%. I chose to use a dull purple, but any color works really depending on your desired final effect.

On a separate layer I painted in a large cloud (upper right), which I faded out on one side before setting the blending mode to Overlay (lower right). A new layer was used to add a brighter area around the center and, using a Radial Gradient with a Foreground to



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Transparent preset, I dragged from the middle outward using a pale pink, as shown in **Fig.28**. The blending mode was then set to Linear Light, which gave the nebula an ethereal glow emanating outward from the center. You will notice on the right that I used a soft eraser to reveal a few lines that look like clouds, which helps break up the symmetry a little.

The following four images (**Fig.29**) examine the process of building the detail using separate layers. In the first (upper left) I added another small cloud using the same pink and blending mode apparent in **Fig.28**. The Soft airbrush is the best tool for this job, especially with the opacity turned down, as it conveys a quality that resembles the dispersion of gas.

The next layer incorporated a different color, but this time the blending mode was set to Soft Light (upper right). The bottom two images reveal two sizes of star clusters, the largest being on the left. These were done using the same techniques covered earlier in the tutorial, with the smaller of the two clusters utilizing the custom brush.

Here is the final version. With the layers remaining intact, it is easy to experiment with the colors and change the composition (**Fig.30**).

This completes the tutorial, which I hope has given you some useful pointers for tackling your

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own space scenes in Photoshop. The only thing remaining is to populate the scene with some fighter ships, but we shall leave that for another day (**Fig.31**).

Richard Tilbury

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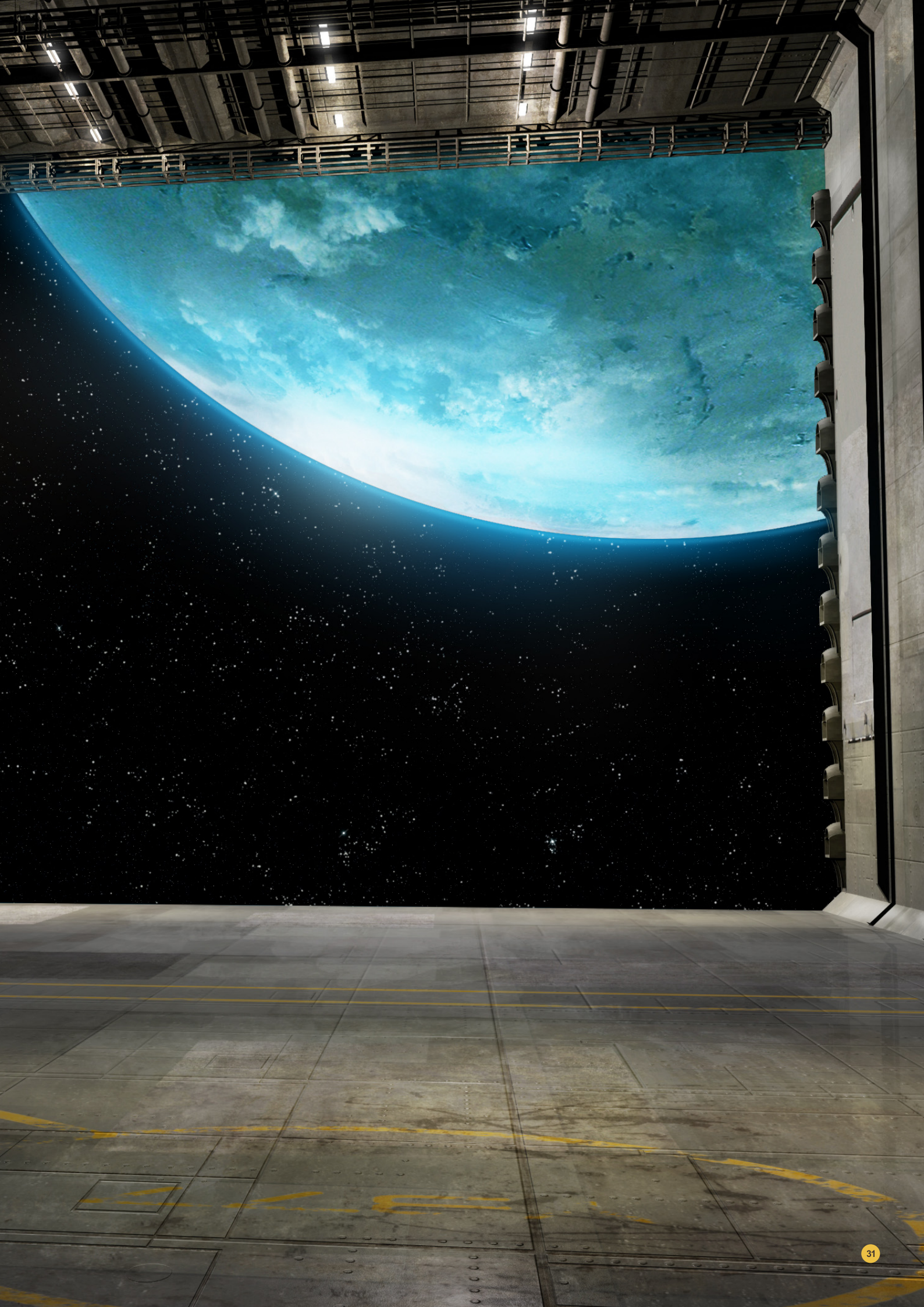
Or contact them at:

ibex80@hotmail.com



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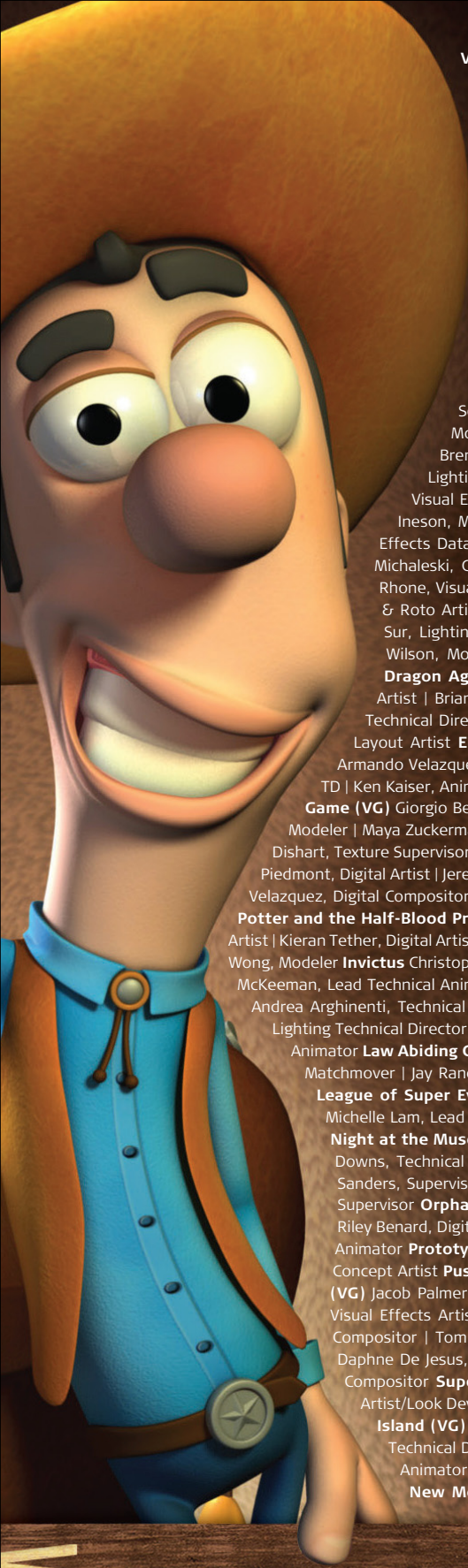

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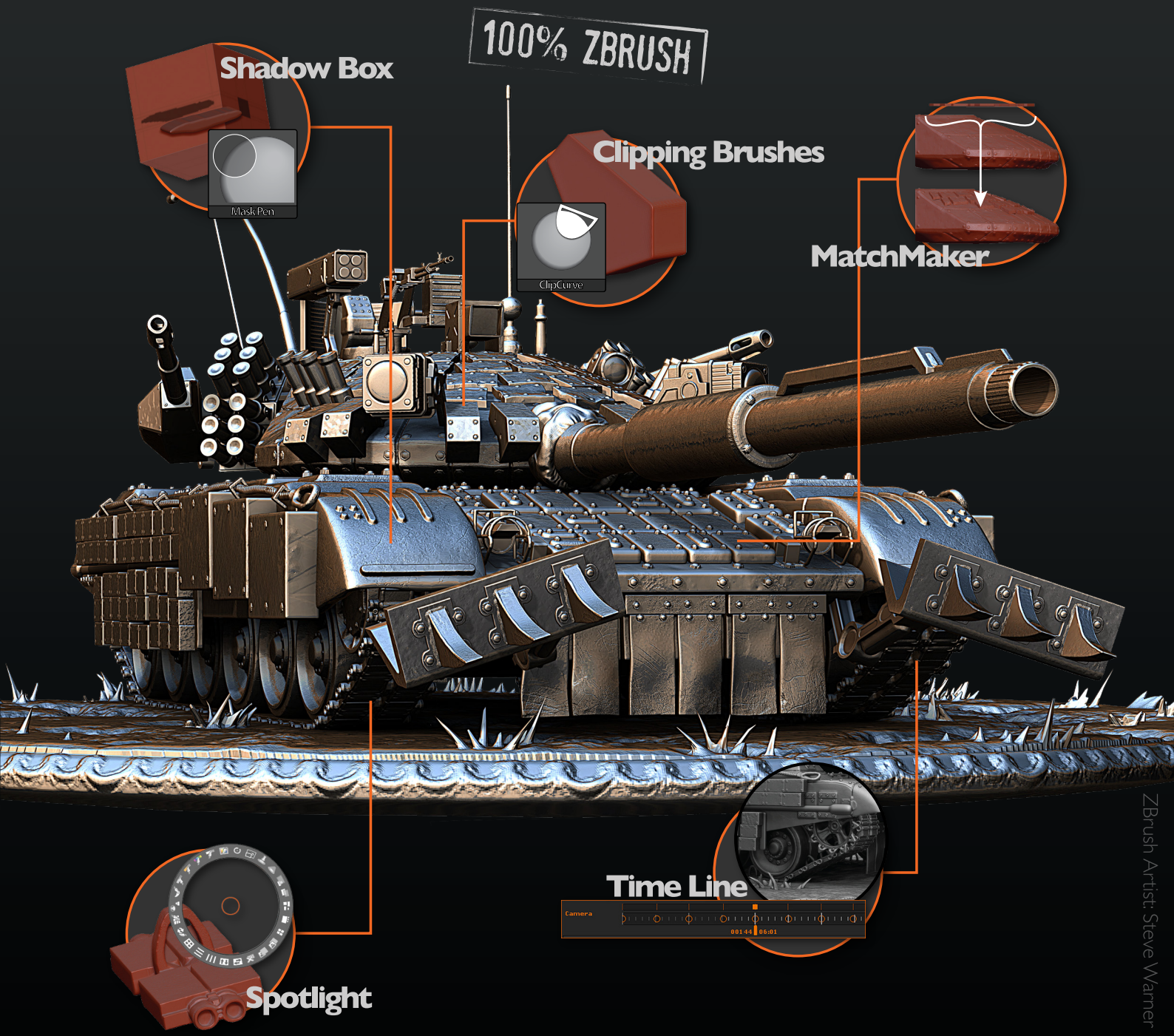
VFS student work by Thiago Martins

ZBrush 4

Conceptualize. Create. Complete.



ZBrush Artist: Steve Warner

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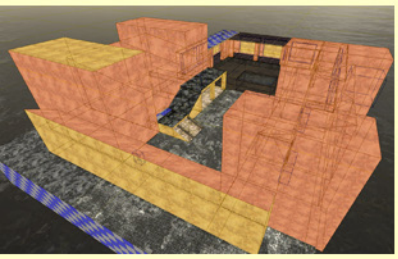
UNREAL GAMES ENGINE TUTORIAL SERIES



CHAPTER 5 - LAYOUT - A

The video game industry continues to thrive and grow at an alarming rate, and is swiftly becoming the most obvious option for employment for anyone in the CG industry. This brand new series of tutorials provides an opportunity for anyone trying to get into the business to learn how to create a basic game level portfolio piece that would impress any potential employer. Using the Unreal Development Kit, UK-based artist Andrew Finch talks us through the entire creation process, from downloading the free software and choosing its settings, to importing and texturing accessories. This really is a must have for anyone interested in gaming or game design.

DOWNLOAD RESOURCES

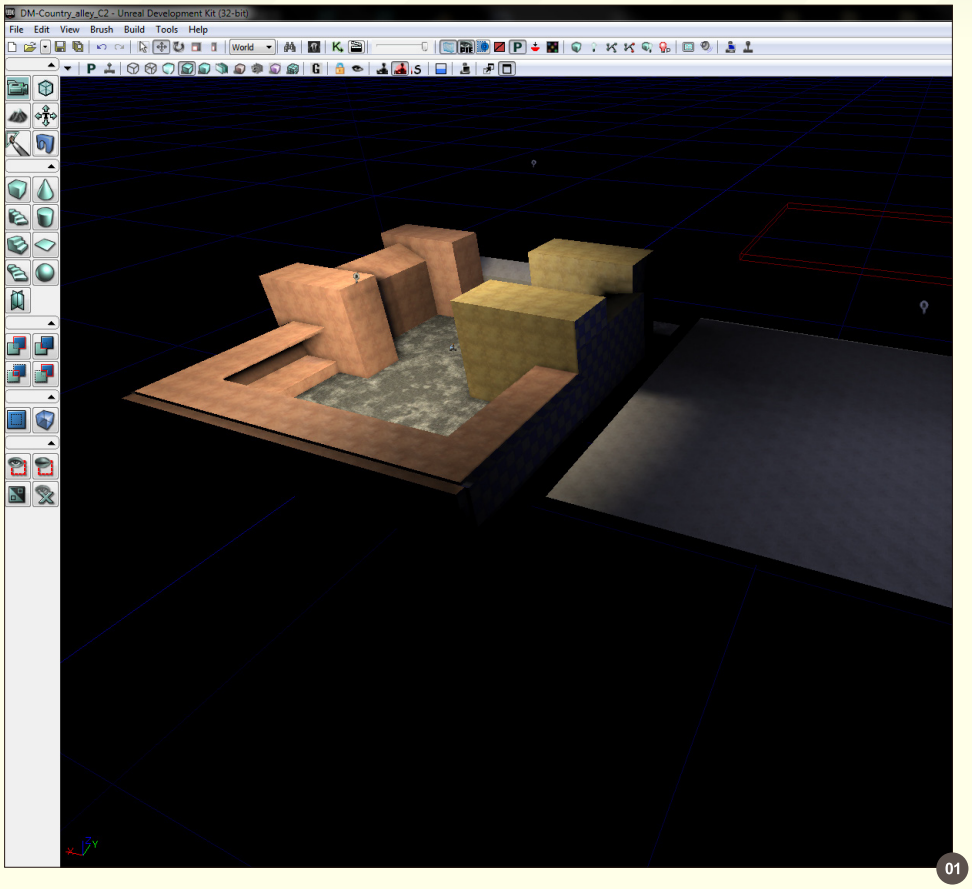
- FREE ASSETS, WHICH INCLUDE:

- ARCHWAY
- BALCONY
- DOOR FRAME
- DOORS FRAME
- DRAIN PIPE
- GATE
- RAILING
- ROOF
- SHUTTERS
- SKY
- WINDOW
- WIRES

UNREAL GAMES ENGINE TUTORIAL - CHAPTER 5: LAYOUT - A

Software used: UDK (Unreal Development Kit)

In this chapter we add assets to the environment and really start to bring the environment to life. This process will add lots of detail and help us to achieve a convincing level of detail. This is my favorite part of creating an environment because you can literally see the environment come to life. I won't complete the layout of the environment but we will get a good idea of the direction it will take.

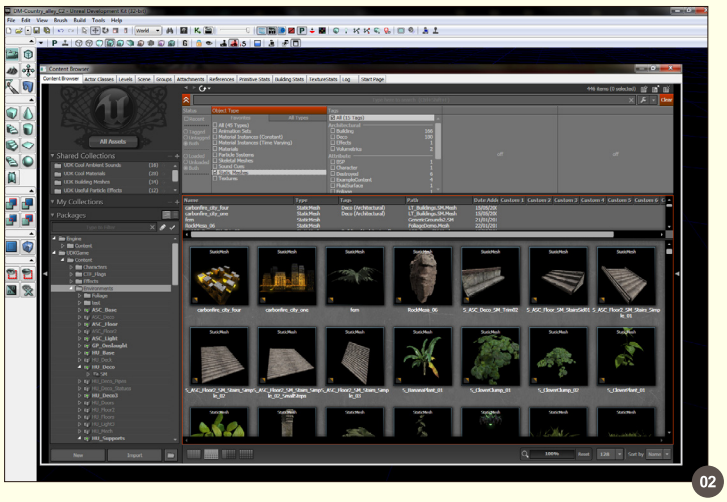


01

Before I start placing assets I like to create an area outside of the main level where I can drag and drop assets, and create a pallet of assets to be used in the main area. It will also allow easy access to assets and allow you to browse exactly what you have instantly. Using the techniques described in earlier chapters, create a platform to the right of the level and give it a texture. Also place a light above this area so we can see the assets that get placed (**Fig.01**).

With the pallet area now set up we can start browsing the assets available. I've added some of my own assets into the browser using the exact same techniques described in the previous chapters. I have provided all the files for these assets with this tutorial. The assets are quickly put together assets and when you're making your own you should spend a lot more time on them, adding detail that will in the end benefit your portfolio piece. I will also use existing assets that come free with UDK to populate the environment. If you open up the asset browser (**Fig.02**), in the left-hand column scroll up to Content and right click and select "Fully Load" – this will load every asset available to you in the Asset browser. To filter all the content we can display certain types of assets, so we can easily go through the suitable assets. In the top column tick "Static Meshes"; this will display only the static meshes in the browser.

Now you can browse through all the assets and drag and drop them into your pallet area, even your custom assets. Try to select assets that will keep within the artistic style of the environment, so for example, no futuristic assets unless that's what you want to do of course. I've stuck to a more traditional style to keep with the architecture and feeling of an Italian country alley. **Fig.03** shows a section of tiled roofing that I have dragged and dropped into the pallet area, I will use this asset to create the rooftops for the buildings.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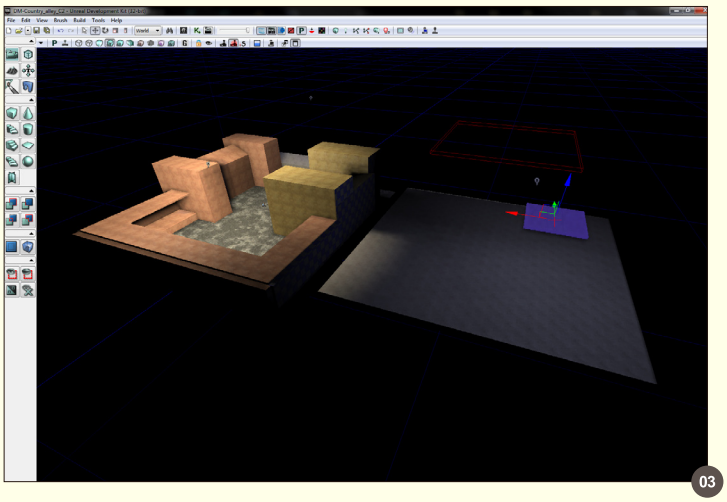
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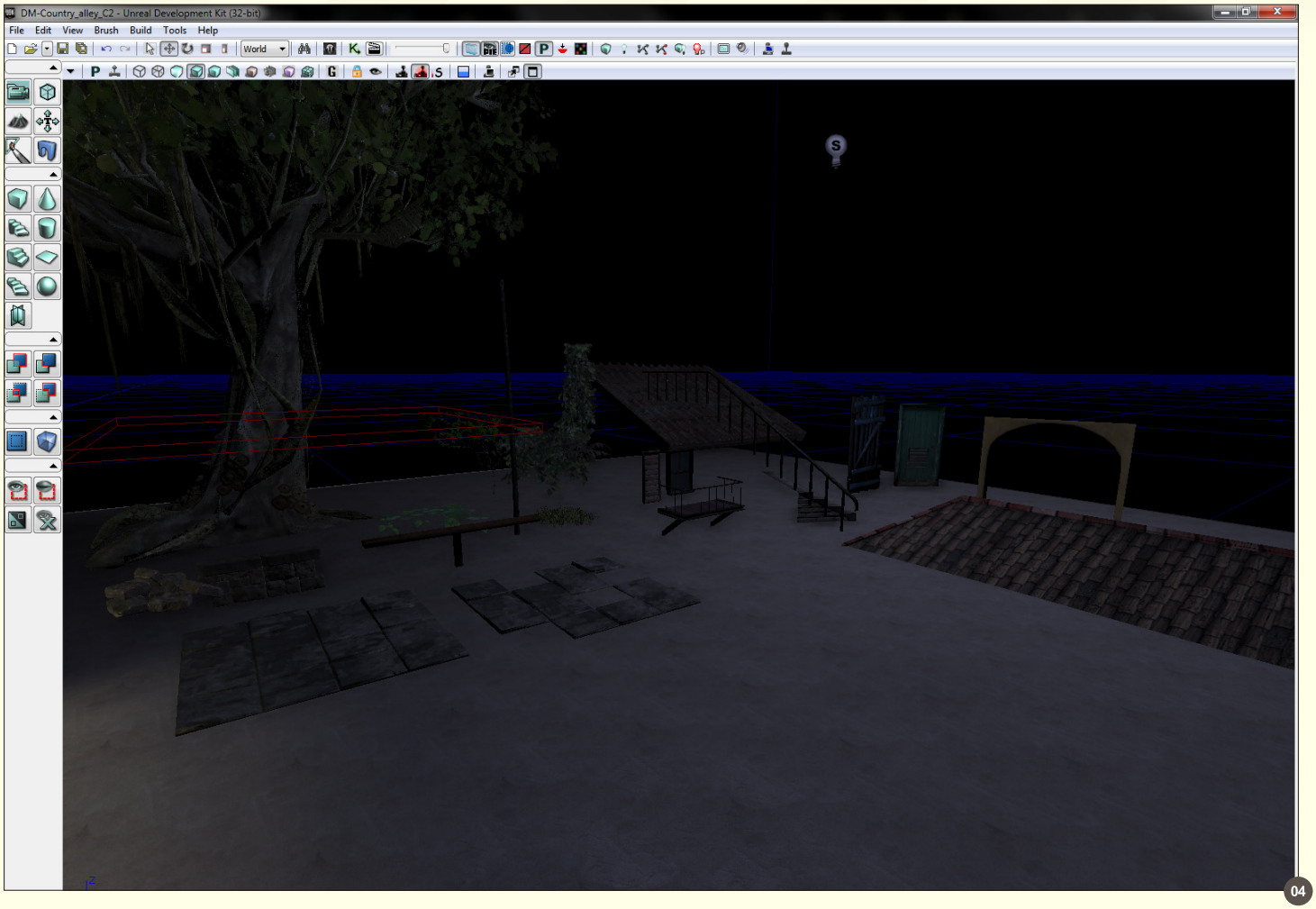
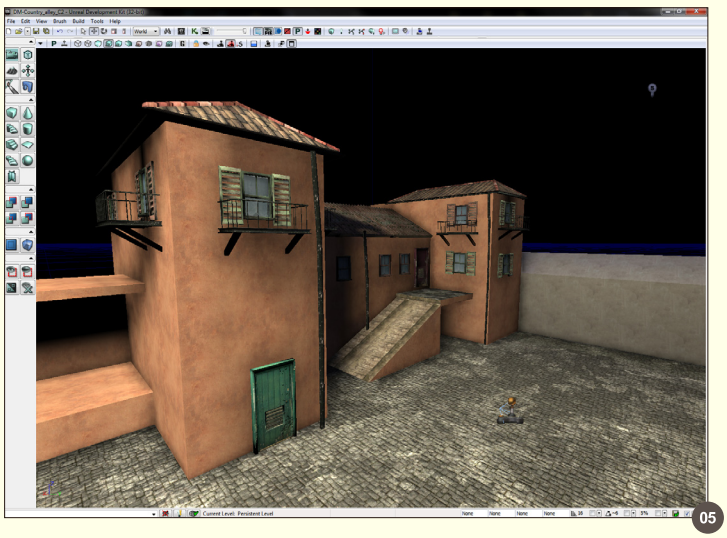


04

After you have gone through the Asset browser and dragged and dropped assets you should have a pallet area that looks similar to **Fig.04**. You don't have to get everything right now, just enough to get you going and grow your imagination as you place them. I won't place much vegetation at the moment; I want to make sure I get all the basics placed such as windows and doors. If I start placing trees and bushes you can easily get distracted and over-use them, so I will keep them until last.

In **Fig.05** you can see the left-hand building with all the windows and doors placed, and with some roofing placed on top. This part doesn't need to be perfect; I've placed these assets to help me get an idea of what works and what doesn't. I can also leave this area and keep looking at it while I work in other areas, all helping me achieve the overall look I want. I've also started to place the floor slabs shown in **Fig.06**. I just copied and pasted the slabs asset in rows and columns until the entire floor area was covered. I have



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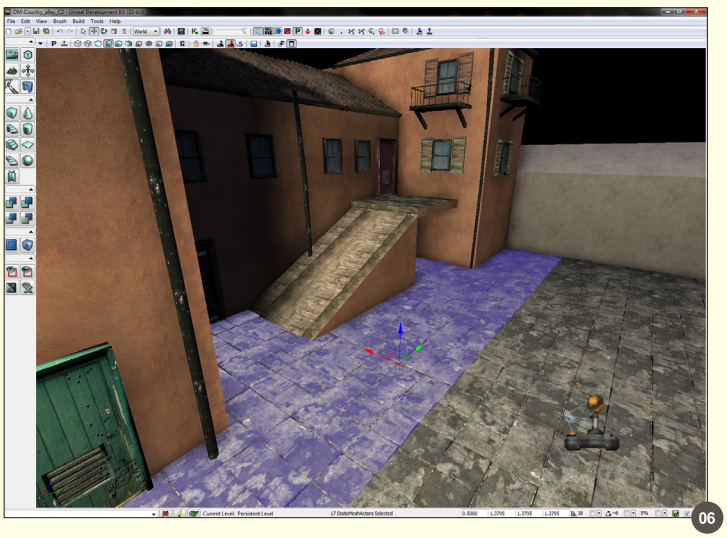

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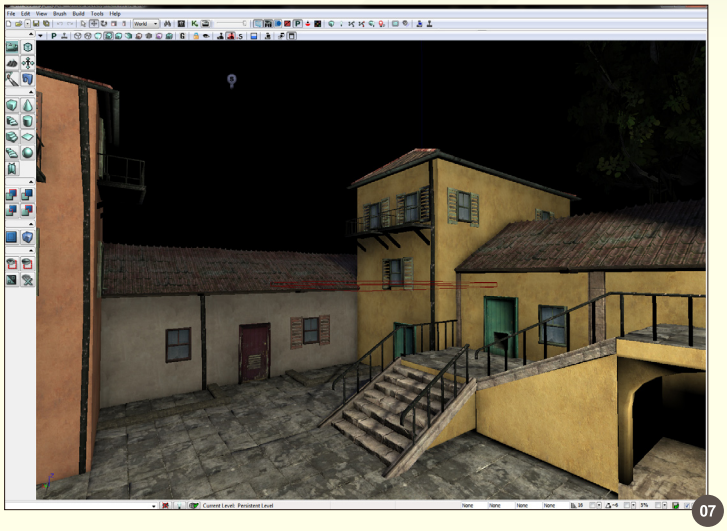

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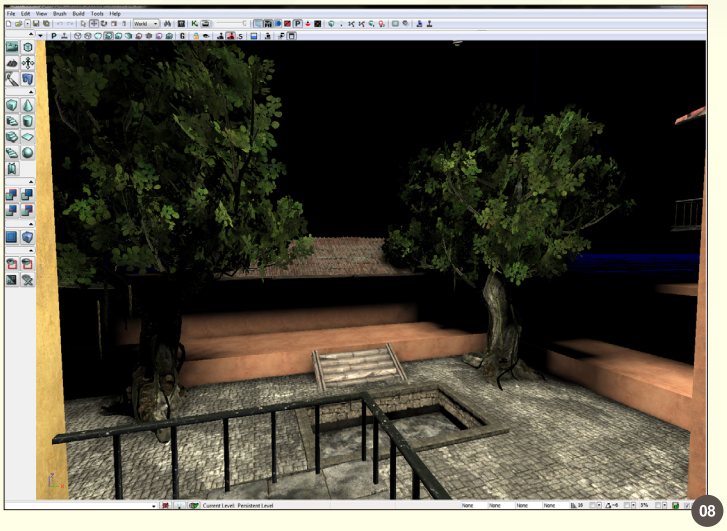


08

continued the process around the other side of the environment covering the middle and right hand side buildings. I've varied the color of the windows and doors so things don't look repetitive (**Fig.07**). I decided to place two of the large trees in this area (**Fig.08**). Because they are so large and make up a lot of the scene's composition it is a good idea to get them placed early in the process. By continuing to place windows, doors, stairs and railings to the buildings you will start to create a more convincing-looking building. I have also placed some arches to help give the scene some architectural points of interest (**Fig.09**).

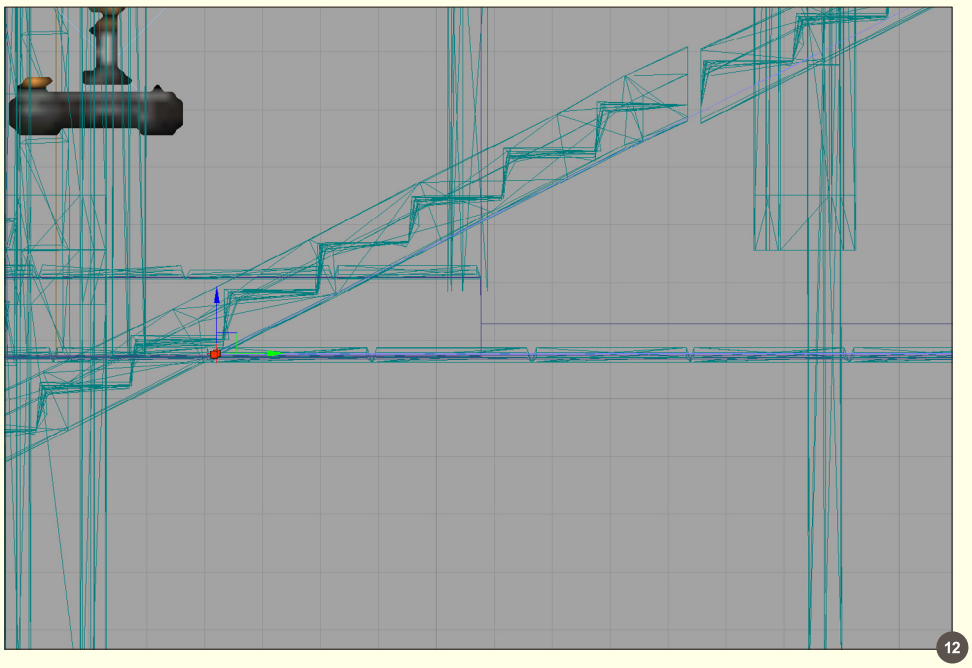
09

From the aerial shot you can see the main environment with some assets placed and the "Pallet" area with the available assets (**Fig.10**).

10

11

When you bring in static objects you may find that the BSP geometry doesn't match up correctly and will need adjusting – a good example of this is the stairs here in **Fig.11**. You can see the stairs are in place, but the BSP geometry is too short and you can see a gap. Clean this up using the Edit Geometry tools I explained in the earlier chapters. Here you can see I have switched to a side view in order to get a more accurately fitting geometry (**Fig.12**). Make sure you rebuild the geometry and lighting to see the latest changes (**Fig.13**).



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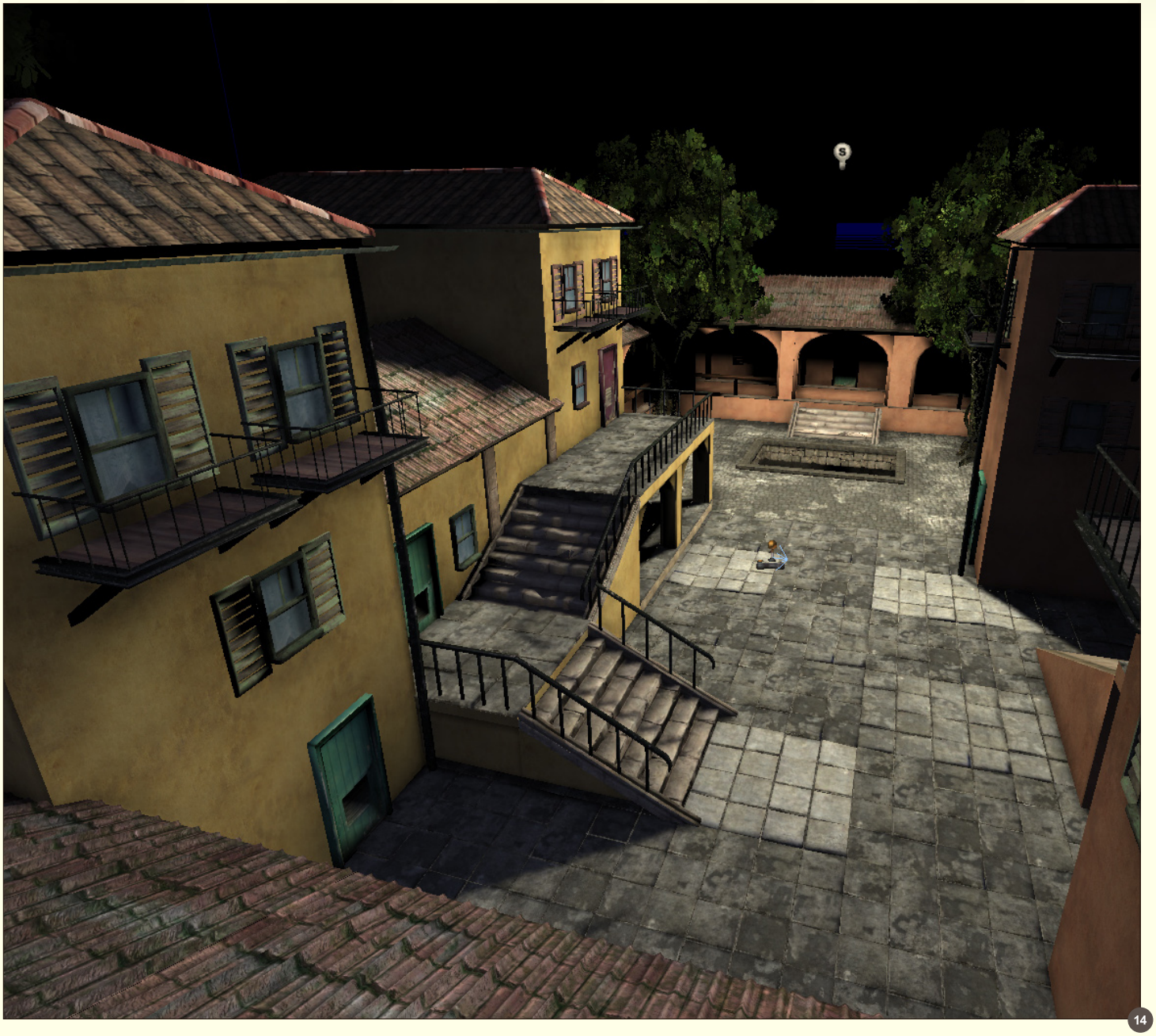
13

As you can see the environment has suddenly taken shape **Fig.14**. Before we started the area was very bare and it was difficult to see the end result, but now we've quickly placed some assets and suddenly the scene jumps to life and you can start to see the direction it will take. At the moment there is only a default lighting setup so the scene will always look a bit off and not very polished. We will get to the polishing stage later on in this series, but you have to use your



14

imagination to see how the scene will look at the end and not be disheartened at this stage that the scene doesn't look good enough. This is the stage that I always struggle with and it is so easy to just give up and start something else.

In the next chapter I will finalize the placement of the assets and also show you how to create decals to really add some varied detail to the scene. Until the next chapter keep searching through the Asset browser, picking out assets that you want to use, and experiment with the composition of the scene. Also, if you don't find something suitable in the Asset browser then make it yourself. Eventually you will want to replace all the UDK assets with assets that you have created yourself so you can say to potential employers your portfolio is 100% your own work.

Andrew Finch

For more from this artist contact them at:
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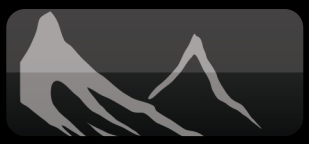
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ZBrush Monster

Character Creation

Chapter 6
Jungle Monster

ZBrush is becoming more and more powerful in the world of 3D, with many artists now embracing its flexibility and hands-on approach to sculpting characters. ZBrush monsters are slowly starting to dominate the CG forums and galleries across the internet and in this six part series we have invited some ZBrush pros to show us how it's done! Each artist has been given a specific environmental condition as a starting point and has sculpted a monster based on that idea, accompanied by a step-by-step tutorial detailing the creation process from concept through to completion.

Chapter 6 - Jungle Monster

Software used: ZBrush

Introduction

Hi, my name is Jonas Skoog (energise) and here is my tutorial on how I created a jungle monster. I aimed for a beautiful image displaying something creepy. ZBrush was used for almost everything in this image, except for some stuff in Maya and Photoshop. I hope to give you a better understanding of my workflow and ideas around creating a character. Happy reading!

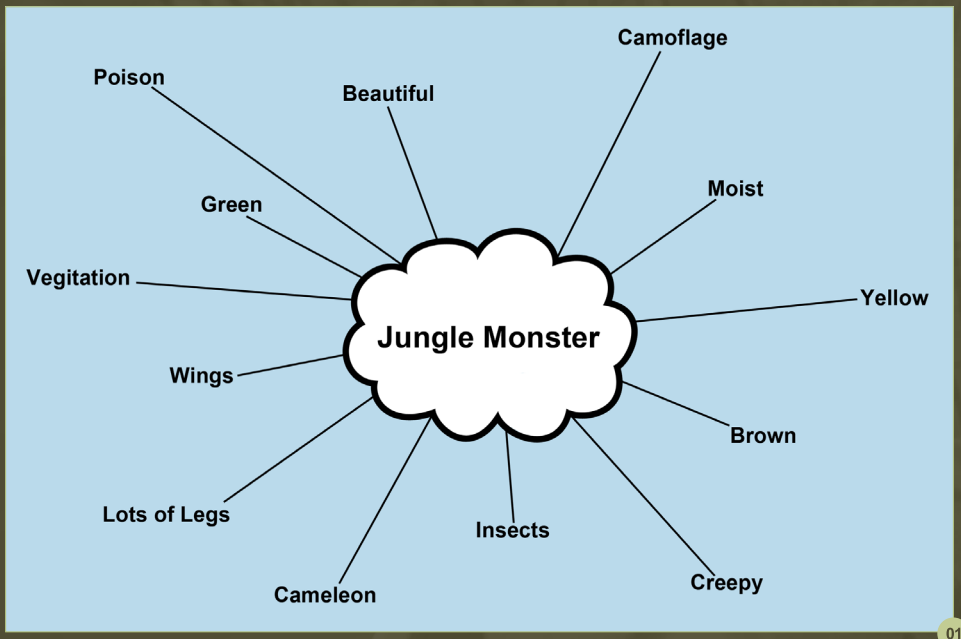
Conceptualization

Brainstorming/References/Concepts

The first thing I did after getting this assignment was to write down all the words I associate with the jungle on a piece of paper. This ended up being quite a few words, so to narrow it down I picked out only the ones that excited my inspiration.

To get a good overview and help my inner eye, a mind map (**Fig.01**) was created containing these words (glad I paid attention in school!). To get to know my monster a little better I then asked myself questions like:

- What does it eat?
- Does it have any enemies?
- What are its strengths?
- Does it have any weaknesses?
- How would it catch its pray?



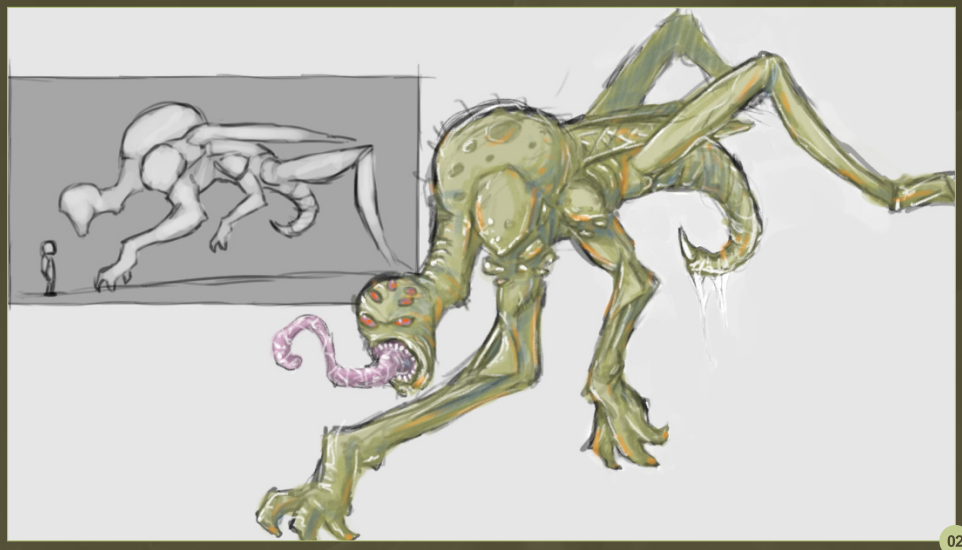
01

When I had answered these questions, I wrote yet another list describing the most important features of the monster:

- Poison stinger
- Uses its wings to aid long leaps but cannot fly
- Hard shell plates for protection
- Long vulnerable neck
- Uses sonar to see (no eyes)

With this all laid out I turned to my best friend Google for support. By searching for words like jungle, insects and monsters I quickly filled a folder with good reference images. After studying these images and reading my notes I finally had a strong vision on what I wanted my monster to look like. Now I just had to make it stick on paper!

My sketches always start out as rough thumbnails and there are usually quite a few of them. This time however my mental image was very clear and the deadline short so I settled on around the third concept (**Fig.02**). The only thing to do now was place the final concept on the left screen along with the reference folder and dig in to the sculpting!

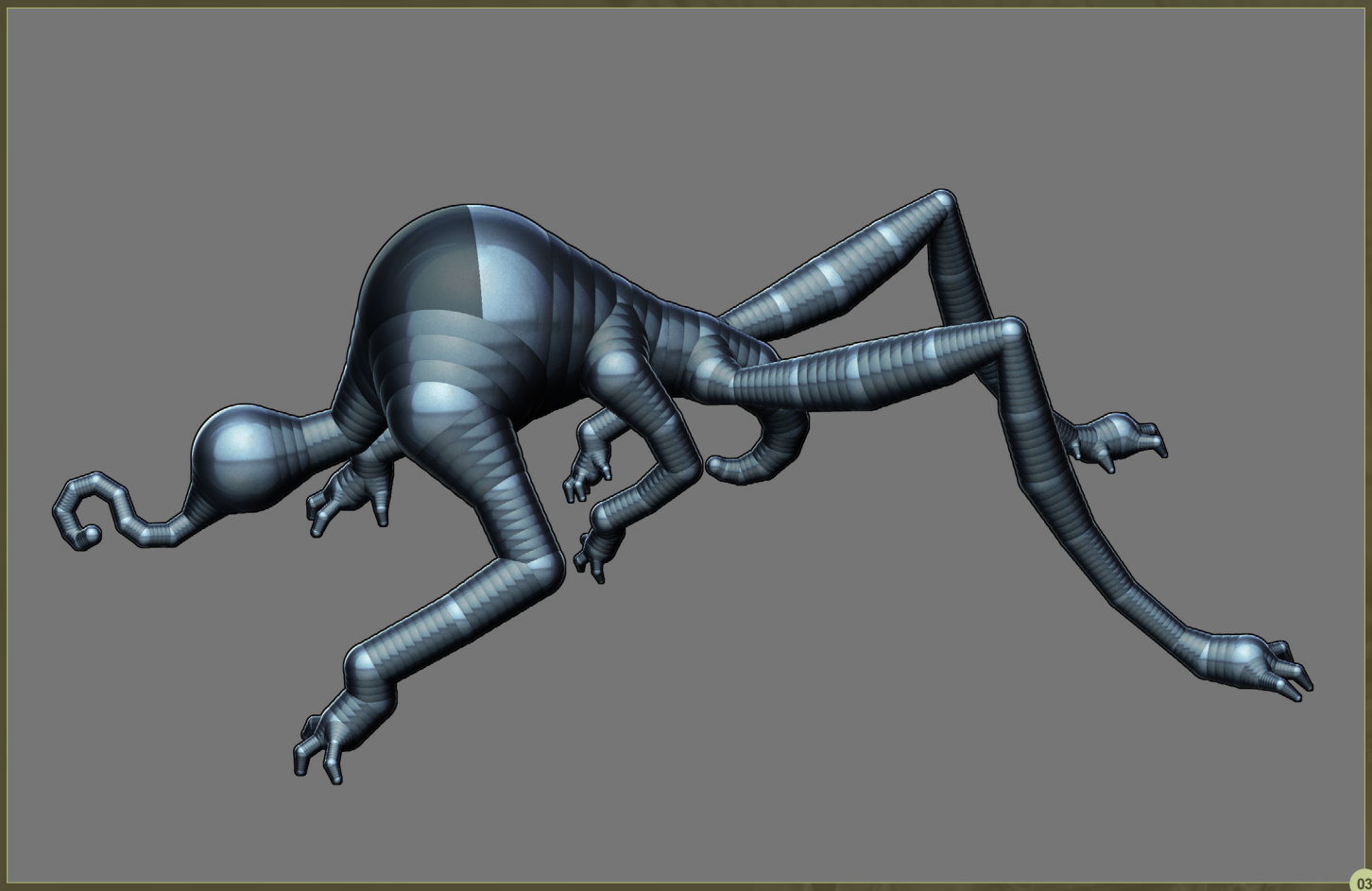


02

Modeling

ZSpheres & Silhouette

To kick off the sculpting I went straight to ZBrush using the ZSpheres. I am not super-skilled in using them, but they get the job done and they do it fast. Within a few minutes you have a decent mesh ready to be turned into a masterpiece. Creating something with ZSpheres is very straightforward. Create the first sphere symbolizing the pelvic area, activate Symmetry from the Transform menu and just start extruding limbs. Make sure you preview the adaptive skin once in a while by pressing the “A”



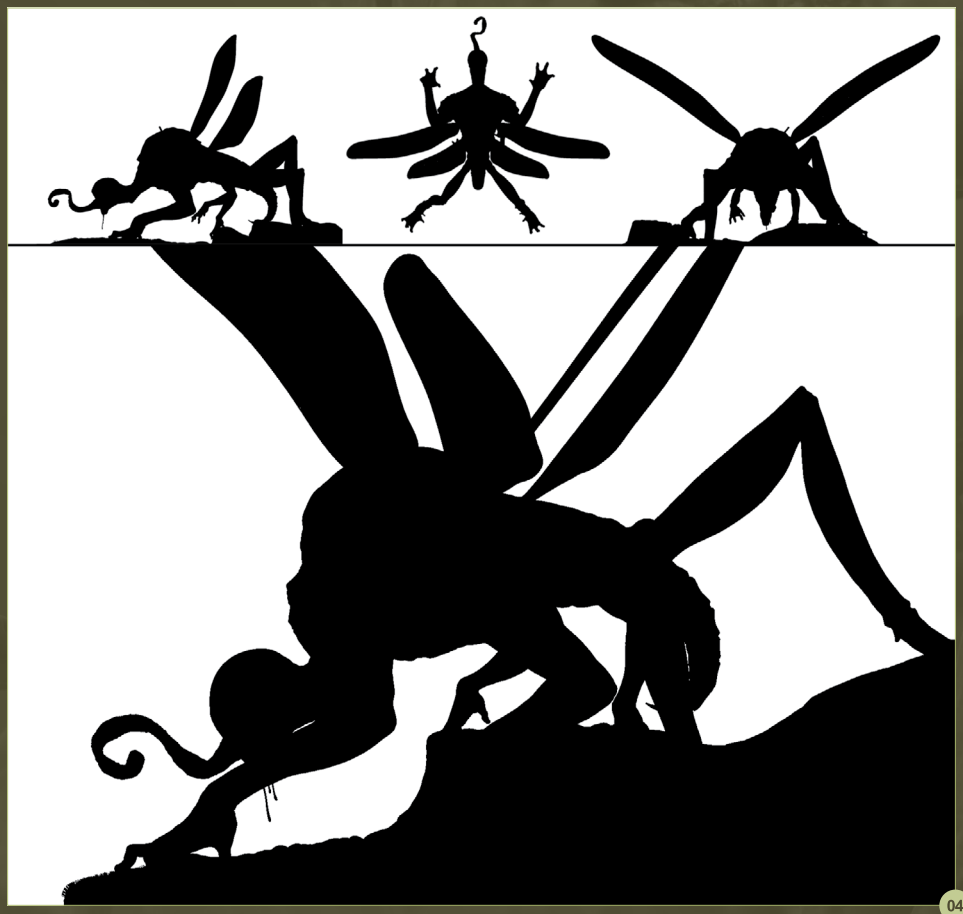
03

key to rule out any weird results. As you can see in **Fig.03** my ZSphere setup was very simple, but it was enough for the results I wanted.

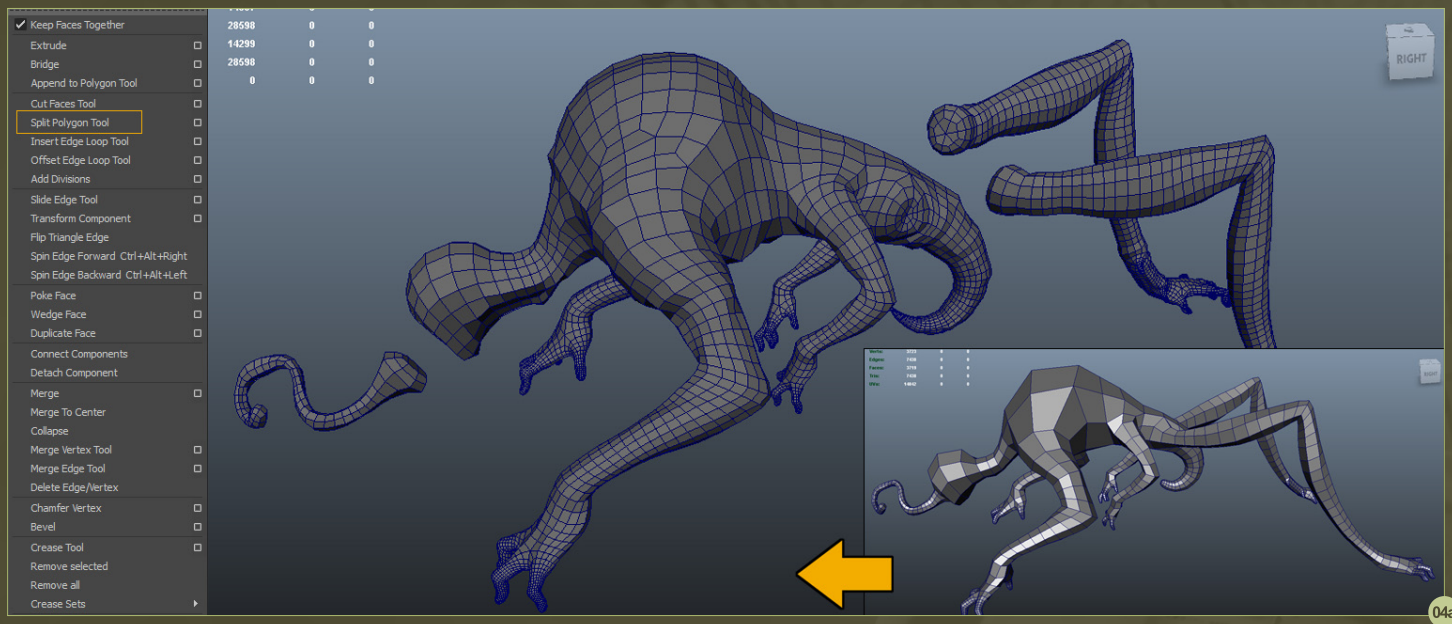
When I had laid out the foundation it was time to start working on a strong silhouette. This is very important for immediate recognition of a character and must be easily understood, like if you see someone you know from afar or from behind. It could be anything from spiky hair to broad shoulders telling you who that person is.

To shape the silhouette I mostly used the Move brush along with some Standard and Smooth brushes for minor touch-ups. Some of the new, cool features added to ZBrush 4 are the alternate Move brushes, which are really helpful. Especially Move Topology, which is a blessing when roughing out fingers and other tight spaces.

I also switched to flat render back and forth to get a better overview, as seen in **Fig.04**.



04



First Sculpt Pass and Topology

With the silhouette nailed down the next step was carving out all the major shapes, which in this case were the shell plates and large muscle groups. For this I used the Clay Tubes brush almost exclusively, at an intensity of around 20. For smoothing I lowered the intensity on the Clay Tubes and made circular motions in a subtractive way. It just felt like I got more control over the smoothing that way (this does not mean that I do not use the Smooth brush if it feels needed). I am sure you have heard this before but make sure you push each subdivision level to its limit before you proceed to the next, slowly building more and more details as you go. This gives you more control and your sculpt stays smooth and free from lumps.

When I had reached around level 5, all the flaws in the current topology started to unveil in the form of serious stretching. This had to be corrected before continuing further. Normally I would have used the built in retopology tools in ZBrush, but since I was quite short on time I had to think of a faster way. I quickly GoZ'd the mesh over to Maya and optimized the topology to my liking using the Split Polygon tool (**Fig 04a**). Not a perfect solution, but it worked out well thanks to the decent topology already provided by the ZSpheres and the fact that no animation would be necessary.

Whilst inside Maya I also took the opportunity to separate a few of the limbs, such as the hind legs and tongue, thus giving me a better chance to subdivide the monster higher. I have found that Subtools above 10 million polygons makes ZBrush very unstable on my system. This results in numerous crashes and renders the Decimation Master useless when trying to include UVs, to name a few.

With my new base mesh(es) imported back into ZBrush all I had to do was transfer all the details from the old base onto the new one. To do this I used a feature called "Project All". Since I chose to change the topology before any serious details, such as pores and wrinkles, were applied I was able to leave all the settings at default. To ensure good results though I recommend doing a projection for each subdivision level of your Subtool starting from the lowest. Also since I had separated a few parts of the original mesh I needed to mask out the areas where they used to intersect. The projection will otherwise try to recreate these non-existing polygons and leave you with pretty weird results.

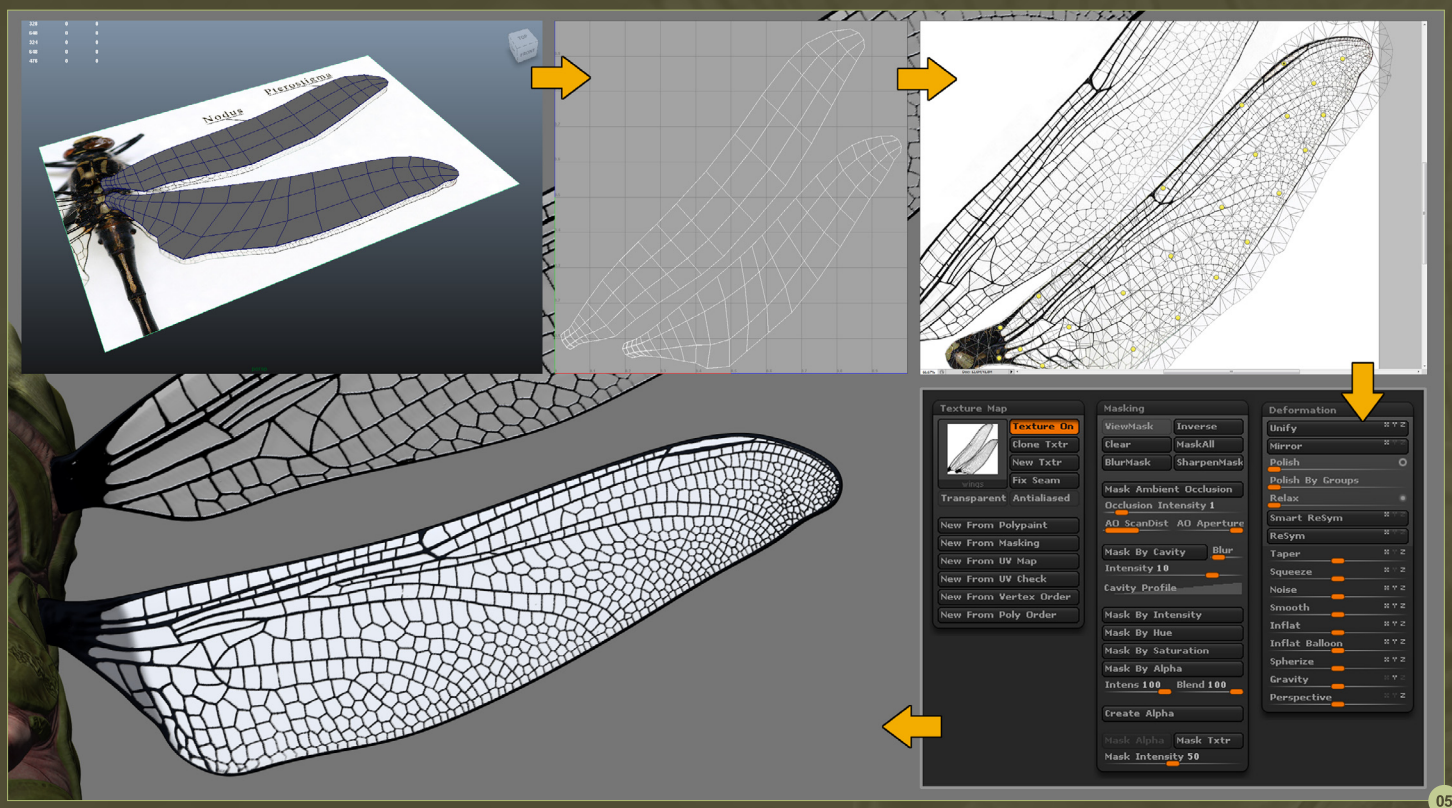
Wings

To create the wings I knew I needed good reference material. By searching Google for a while I found a decent image of a dragonfly seen from above that I could use. This image was then imported into Maya as an Image Plane, allowing me to quickly rough-out the basic shape of the wings. A "UV Planar" was then applied to the mesh, allowing both sides to share the exact same UV space. The result was the textures applied to the wings being mirrored on both sides. After placing the UVs of the wings inside the 1-1 UV space, covering as much of the square as I could, a "UV Snapshot" 2048 x 2048 was exported as a JPEG.

This snapshot was then opened up in Photoshop, along with the Image Plane of the dragonfly in a separate layer. After some cutting and pasting to align the wings with the UVs, I made some last alterations using the Puppet Warp tool (found in the Edit menu).This makes the image you wish to transform into a triangulated 2D mesh, allowing you to create vertex points and deform by moving them.

I then finished everything off with some level adjustments, and by cleaning up a few dirty pixels, together with inverting it and converting it to grayscale to serve my purposes in ZBrush.

It was now time to return to ZBrush by importing the wing meshes as Subtools and applying the newly created texture to them. With the texture in place I chose "mask by intensity" to mask

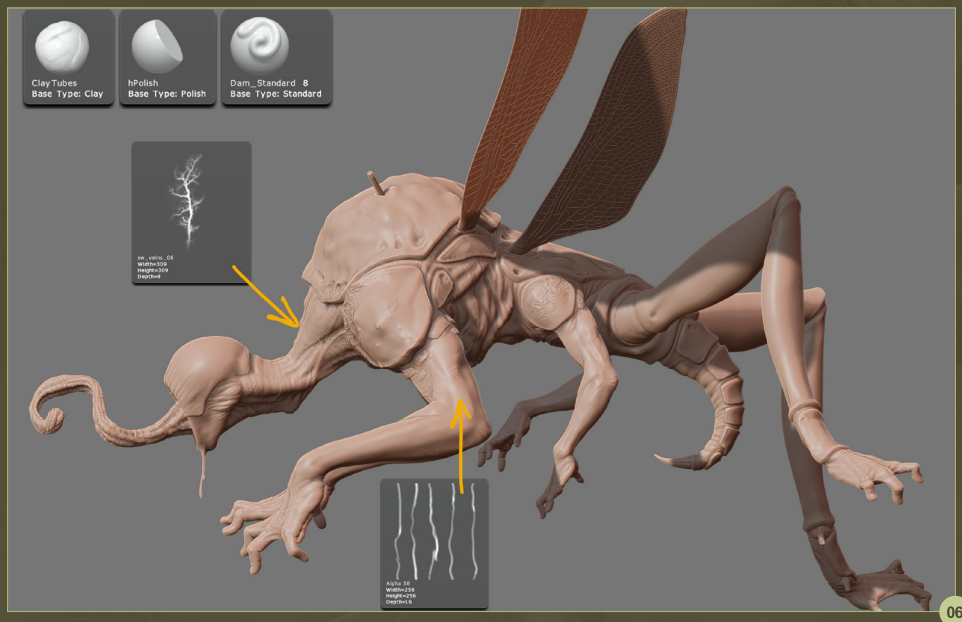


05

out all the black parts in the texture to protect the pattern in the wings. With the mask in place I was now able to apply an “inflate deform” to raise the veins just a little on both sides. Voila! Finished insect wings (**Fig.05**)!

Fine Details

With new topology, overall definition and a strong silhouette it was time to start adding some of the good stuff like tendons, muscle definition and damage. For this task I used a variety of brushes like Dam Standard, Clay Tubes (on very low intensity), Hpolish etc. For parts like the shell plates and such I began by laying out an alpha of a broken wall, which I then used to find new shapes and patterns. It is important though to see the alphas as tools and not a final solution. To give the monster fine details like wrinkles and such I relied heavily on layers and morph targets. I started by adding lots of wrinkles using the Standard brush with “spray” and “alpha 58” applied to it (**Fig.06**). By storing a morph target and sculpting in a separate layer I could then used the Morph brush to remove all the unwanted parts. I then deleted the morph, added a new one and finally created a new layer to add new details. This method might be a little tedious, but it gives you total control over intensity and placement of details. I used the exact same technique for pores etc., just switching the alpha. Dam Standard was also used for making wrinkles and crisping up other details.



06

Environment

The environment was created in pretty much the same way as the monster. The basic shapes were roughed out using the Clay Tubes brush and Hpolish. For the stone and wooden surfaces, alphas were laid out and further sculpted using the “Morph target method” that I mentioned earlier. I then went crazy with the Dam Standard and Clay Tubes brushes to create the various crevices between the boulders in the stone sculpture and also the cracks in the wood (**Fig.07**).

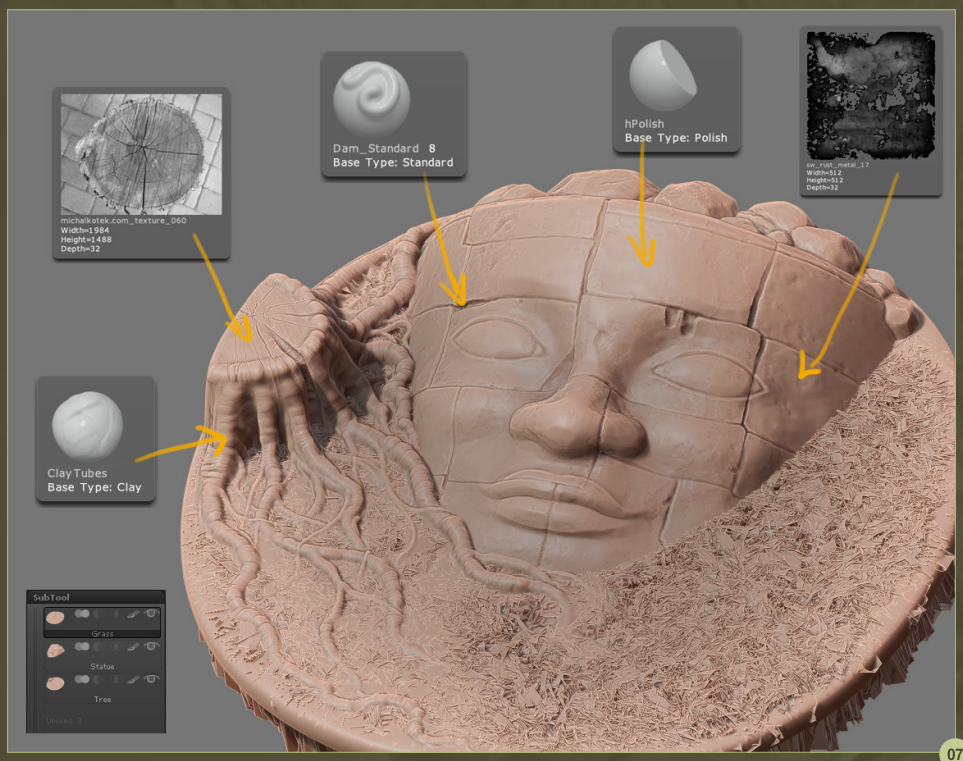
Texturing

Polypainting

When painting my Subtools I begin by assigning the “SkinShade4” matcap to get a proper canvas to work from. I then fill the model with a color that represents the final tone I am after to get rid of all that white. To fill the model, first make sure that only RGB is active and then press “FillObject” found under the Color menu. From here I start blocking out different temperature zones (**Fig.08**).

- Red for warm/sensitive areas like thin skin stretching over the muscles, knuckles, ears etc.
- Blue for areas with lots of blood vessels and cavities like around the eyes.
- Yellow for places where the bones are near the surface like the forehead and ribs.

When painting these areas I use a brush made by Scott Spencer, which I call the Mottling brush. It is basically the Standard brush with Spray (put Flow and Color to 0 in the Stroke menu) and “alpha 07” applied. This will spray tiny dots all over your strokes, making the colors blend in a pointillist manner.



07

08

I really recommend buying his book, *ZBrush: Character Creation*, for an in-depth explanation.

When the temperature zones are in place I switch over to the Standard Brush and the color white for something called a noodling pass, meaning that everything gets covered with tiny squiggly eight shapes to break up the surface. I spray a very light layer of pink (if I am doing skin) all over the model to blend the colors further and tone them down. I then spray a darker, desaturated version of the previous color around the muscles to gain some definition. Another temperature pass is then added to touch up where needed. I finish the paintjob by filling in the veins with a blue color, adding birthmarks and add other imperfections where needed.

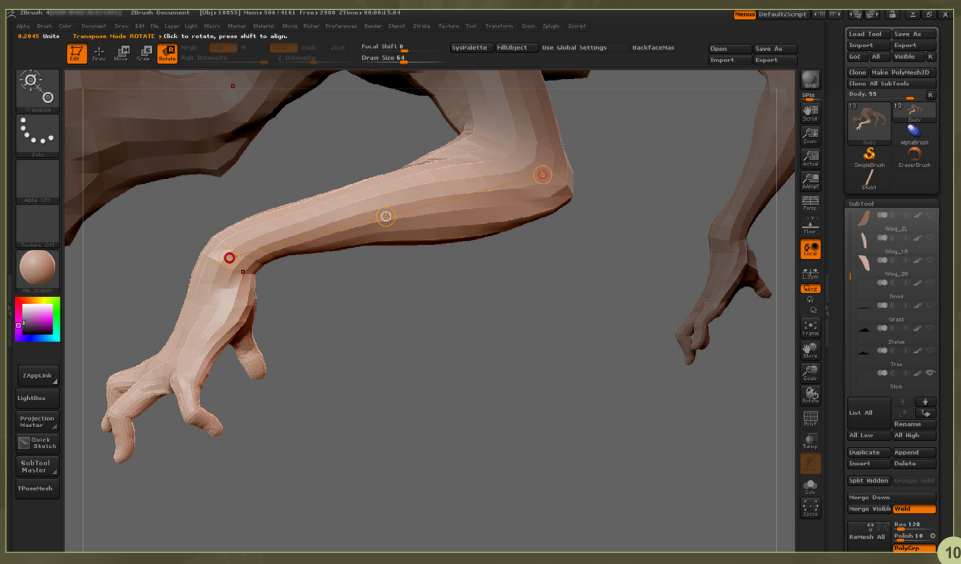
An environment can also be painted using this mottling technique, but to a far lower degree and with a more extensive use of different textures. A new great tool in ZBrush 4 is “Spotlight”, which I use exclusively when adding textures to my models (**Fig.09**). It works like stencils, but giving you full control over rotation, size, color adjustments and much more.

09

POSING

Transpose

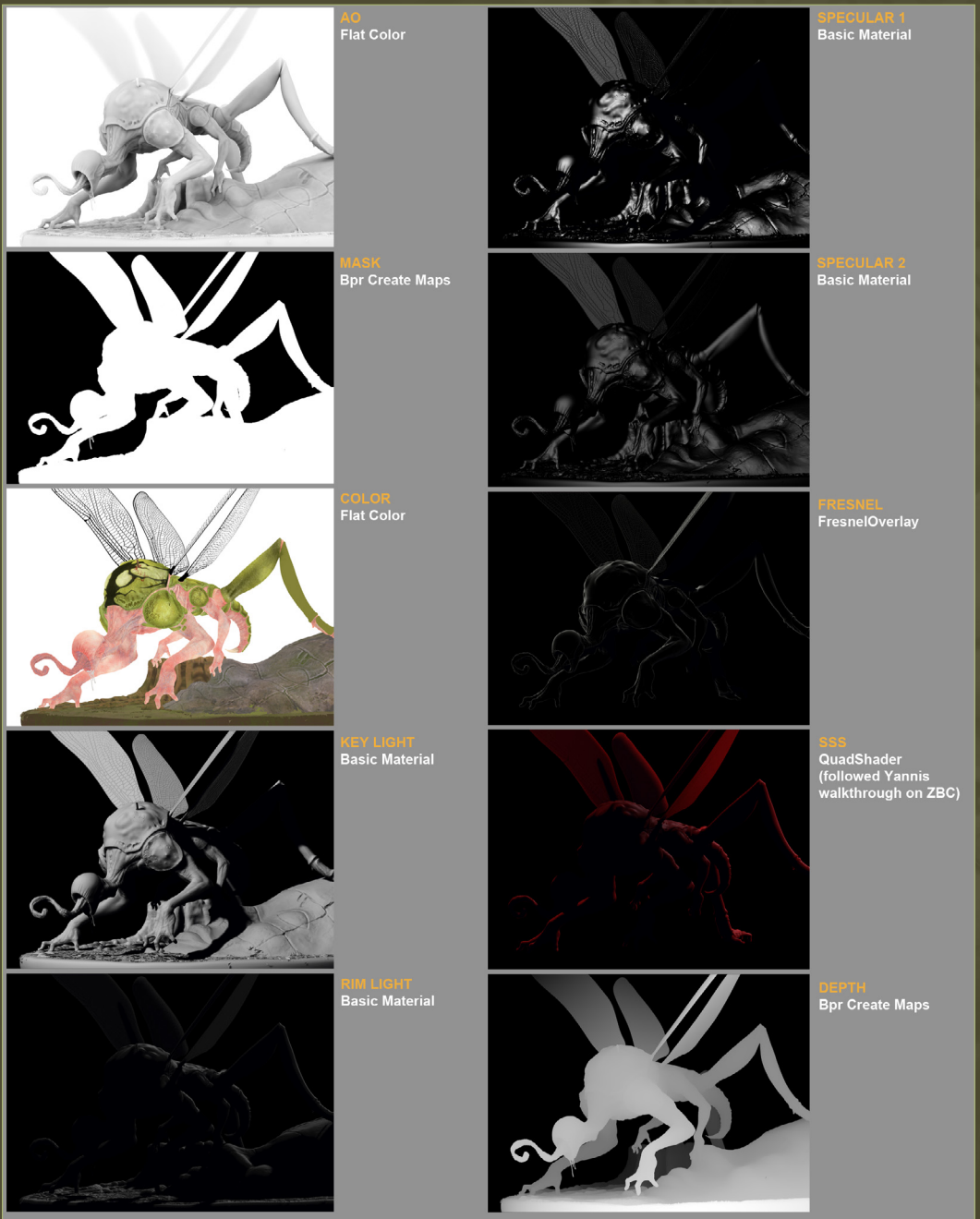
While posing my monster I wanted it caught in the moment when climbing over the stone statue. To achieve this I used the Transpose tools within ZBrush. This allows you to add temporary joints to parts you wish to pose (**Fig10**). Let us say I wanted my monster to bend his elbow a little. I would then mask everything on the body except for the area below the elbow and blur the mask for a smooth deformation. Next I would hit “R” on the keyboard to switch to the Transpose tool for rotation and draw out a joint from the center of the elbow all the way down to the hand. By then moving the end of the joint closest to the hand, I am now able to rotate the arm below the elbow into the desired position.



10

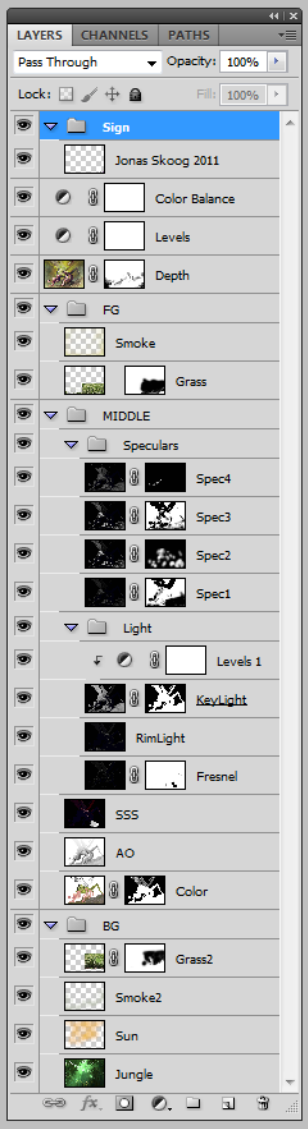
You can use the Transpose tool in the exact same way to change the movement and scale by hitting the “W” key for move and “E” for scale (you get back to brush mode by pressing “Q”).

This is something that is very effective when you are blocking out your shapes in the “silhouette pass” that I described earlier.



Big credit to yiannis t.: http://www.zbrushcentral.com/showthread.php?t=95227&page=4&pp=15

11



12

Rendering

Render Passes

When rendering out my images I always split them up into several render passes, giving me much more control over the final result. The passes used to create the jungle monster ended up being quite a few since I always do lots of renders with different setting and then pick out the ones I like the most. As long as I have my base passes such as Color, Specular, Shadows and Light the rest is pretty much trying out what looks good (**Fig.11**).

I must say I am very impressed with the new BPR render in ZBrush 4. The results it gives makes the old “Best Render” look like a preview in comparison.

Putting it all Together

I usually start putting the image together in Photoshop right after the first passes have been rendered out. This way I can start working on the background and such while other passes render in the background. With a rough background containing the most important colors in place I can then make conscious decisions about the other passes at an early stage, ruling out what works and what doesn’t.

As more passes emerge it gets very important to have an organized layering system otherwise, for me, chaos is sure to strike when I can’t find the pass I am looking for. Therefore I always begin by adding three folders in the layer stack, back-, middle- and foreground (**Fig.12**). Within these folders everything is separated into even more folders for specular and shadows etc. Also

naming your layers properly is very important. When all the layers have been tweaked to my liking I finish it off with a few adjustment layers, such as Level and Color Balance. With the image pushed to its limit the last thing to do is applying depth. To do this, create a new alpha layer (under the Channels tab next to Layers) and paste the depth image taken from ZBrush into it. Next we have to merge all the layers to one in order to have the depth affect the entire image. What we have to do now is, under Blur in the Filters menu, choose “Lens Blur”. Inside the filter look for “depth map” and select your alpha for the source. This will give Photoshop an idea of distance in your image and blurs it accordingly. Feel free to try out the different settings like Focal Distance and Radius before you are done for optimal results.

Conclusion

I would like to thank 3DTotal for the opportunity to write this tutorial. I had a blast doing it, even though the time limit of 20 days was a little stressful (being an artist, it was the writing part that took up most of the time!). I hope you have enjoyed it as much as I did creating it and if you have any questions, do not hesitate to send me an e-mail.

You can also visit my website for more art and tutorials. Thanks!

Jonas Skoog

For more from this artist visit:
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"I DIDN'T USE ANY ADVANCED LIGHTING. I HAD A LITTLE PROBLEM HERE WITH OVERBURNS IN SOME PLACES, SO I RENDERED THE CAR WITH AND WITHOUT VRAYSUN AND THEN COMBINED THEM LATER IN POST-PRODUCTION"

This futuristic scene is the handywork of 3D artist Brano Florian. As always we are provided with another insight into the creative flow of an industry professional and Brano shows us how he used photos to texture his rusty-looking vehicle. He also covers a subject that often catches out 3D artists; creating grass. Read onto find out how this post-apocalyptic vehicle was created.


01a


01b

WAL-MART 2161

Software used: 3ds Max, Photoshop

Hello, my name is Brano Florian and I would like to show you the approach I have used to create my picture *Wallmart 2161*. It was partially a commercial project based on a design, but the rest was in my hands. So let's see the process.


02

MODELING & MAPPING OF THE TRUCK

For the modeling I used standard poly modeling in 3ds Max 2009 with the Polyboost plugin **(Fig.01a – b).**

From the beginning I was careful to remember to use automatic mapping on splines where there was no need to deal with UVs later. On the other parts I used a simple UVW map modifier and tiled texture setup with UV Gizmo. The cabin was mapped in UV Layout, which I can recommend for this sort of "half-organic" object.

The back side of the model was made quite detailed in case I wanted to animate the scene in the future (**Fig.02**).

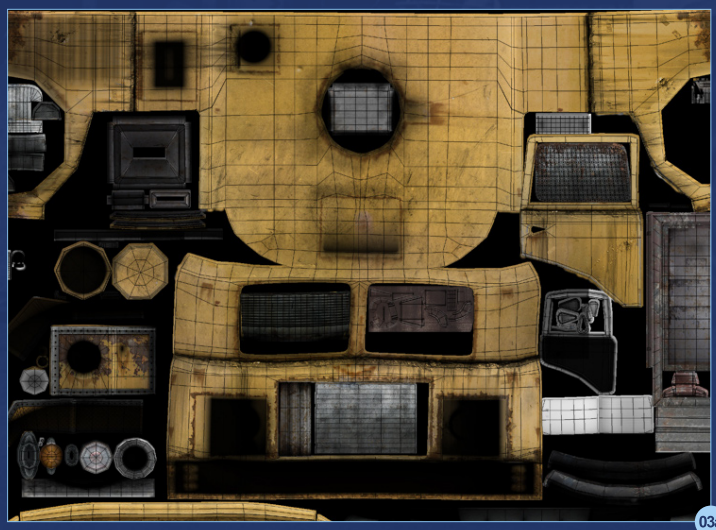
TEXTURING

For the model I made four main textures in Photoshop (**Fig.03a - b**). I did this mainly by combining photos. Rust was added with random brush strokes or taken from other photos. The textures were converted to JPEGs and then a Sharpen filter was applied.

The gun was mapped using automatic unwrap in 3ds Max, then exported into Bodypaint for color and to add the scratched edges.

MATERIALS

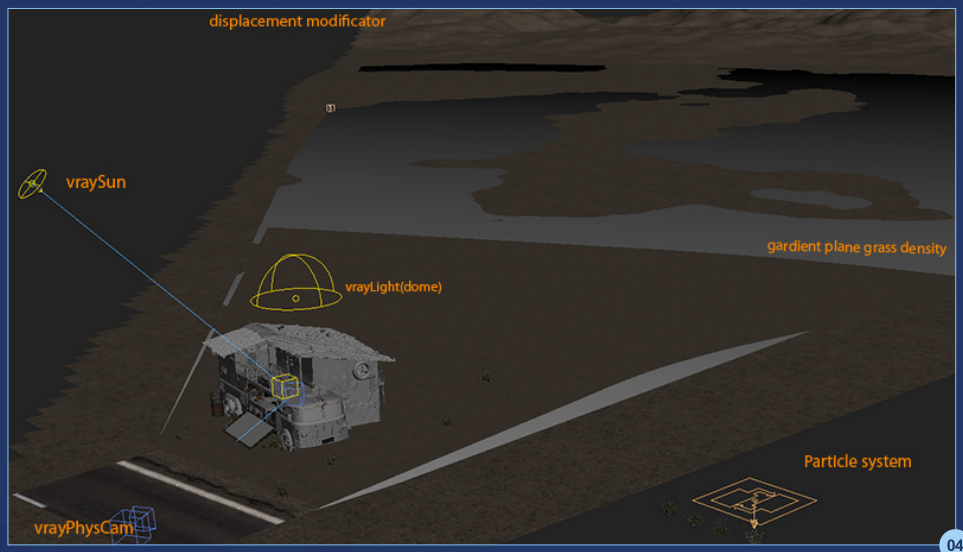
The materials are nothing special. The Bump and Specular maps were edited PSD files. This is a relatively quick process. Individual bitmaps are assigned to slots in V-RayMtl. The only values that I set were the Reflection values in the basic parameters.


03a


03b

Terrain

The terrain is divided into three parts. The furthest part is a large plane with a Displace modifier. Inside is a Cellular map masked by a radial gradient. After I collapsed these layers I rotated and adjusted the scaling to make the ground look good from the camera view. The part out of view was hidden by a Poly modifier (**Fig.04**). The material is a simple mixture of two different tiled textures of sand masked by a procedural Noise map. I'm sure you know what I'm talking about; this technique is well covered in other Making Ofs on www.3dtotal.com. The middle part of the terrain is just a dense plane with a Noise modifier in place to emphasize the varying surface.



04

The Road

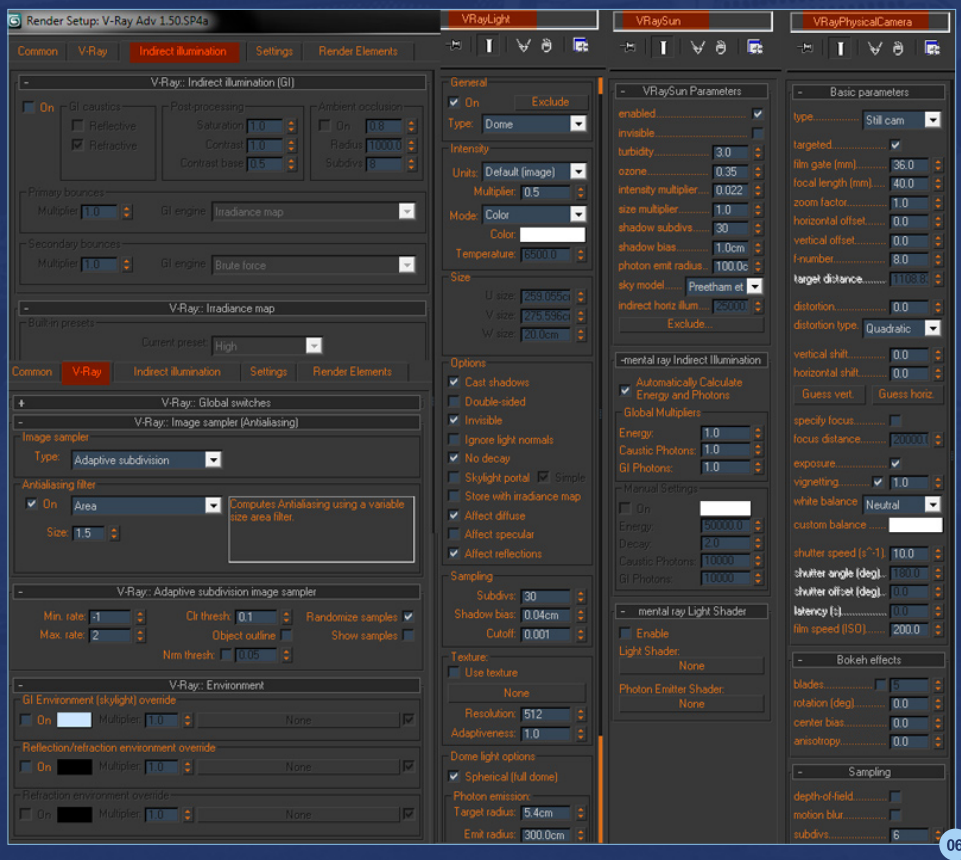
The road is closest to the camera so it had to look good. I didn't want to waste much time here testing Displacements so I made it as simple as I could. I mapped onto a plane an edited photo of a road and exported it to Mudbox. I then sculpted the cracks and varying levels. Then I imported it back into 3ds Max with the highest level of tesselating. The last thing to do before the road was complete was to set some Noise.

Objects in the Environment

I modeled five blades of grass. Each one was slightly different in size and direction of bending. I copied them into a clump of grass with the Advanced Painter. The painter took care of rotation and random size as well. I then applied a noise modifier and FFD for the final shape adjustments. The material is a multi-sub material type with four standard materials. Every one has a slightly different yellow-green gradient in the Diffuse slot. To assign an ID I used the script "randomElementsMatIDs" by Andrei Kletskov. The rocks were generated by the script "RockGenerator" by Alessandro Ardolino and the material is the same for the terrain (**Fig.05**).


05

The objects that I needed to place precisely were placed using Advanced Painter. The other items were placed via a particle system (Neil Blevins made a great tutorial about this).



06

Render

The render was done using VRaySun, VRayDome and VRayPhysCam in V-Ray 1.5. You can see the settings in **Fig.06**. I didn't use any advanced lighting. I had a little problem here with overburns in some places, so I rendered the car with and without VRaySun and then combined them later in post-production. I rendered out the AO, Z-Depth, grass and, of course, the main scene (**Fig.07a – d**).

Post-production

All the layers were composed in Photoshop. To find a suitable sky was more difficult than I had thought. I found one from cgtextures that was fine after some editing. The saturation moderately decreased in distance to add some depth and I also adjusted this in the Depth pass. The swirling dust in the background was made with a simple cloud brush (found it on the internet).

I then did some basic color corrections, editing of curves, and added some blur to fake depth of field (**Fig.08a – b**).


07a


07b


07c


07d

Brano Florian

For more from this artist, including the scripts used in this image, visit:
http://www.branoflorian.net
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08a


08b

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With the release of 3DTotal's book, *Digital Art Masters: Volume 5*, we have some exclusive chapters for you...

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This month we feature:

"In Waiting"

by Viktor Fretyan

The following shots of the “Mouse Love” book pages are featured here in full-resolution and can be read by zooming in...

In Waiting...

By Viktor Fretyán
Job title: Visualizator – Tippin Corporation
Software used: V-Ray, 3ds Max, Photoshop

Introduction

This is a project I have been working on for the past year. It is the Exchange Palace at Budapest, and it is going to be rebuilt completely by the Tippin Corporation, a firm I am currently working for. I was really glad I could contribute to the project and I hope that soon I will actually be standing in the middle of this rotunda.

After completing the renderings for Tippin, I decided to make my own version of the main aula, or atrium. Here are some of the original renders of the building (**Fig.01a – b**).


Fig.01a

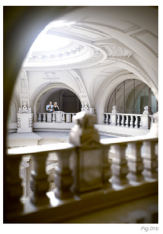
Fig.01b


Fig.02


Fig.03a

Modeling

My friend Koroljov Ilja helped me a great deal during the modeling phase (mainly with the ornaments, which were the hard parts!) (**Fig.02**). We had to model everything from old photos (**Fig.03a – b**).

Basically everything was modeled from primitives. Because of the symmetrical nature of the entire room, the Symmetry tool was mandatory in the modeling process, as were other modifiers such as Lathe and Sweep. When I started a new part, I usually drew a section of it using a spline. I extruded it (or used Sweep, Lathe, etc.) and converted it into an Editable Poly to be able to edit it (**Fig.04 – 05**).

The scene as a whole looks very sophisticated, but if you take a closer look at things you will find that all the details were pretty easy to model. The complicated models were done by my friend, Ilja. I must admit that, in general, the modeling stage is the least interesting for me and is the area in which I am also the least qualified.

Texturing

This stage was a lot more fun! **Fig.06** shows some of the interesting materials in the scene.

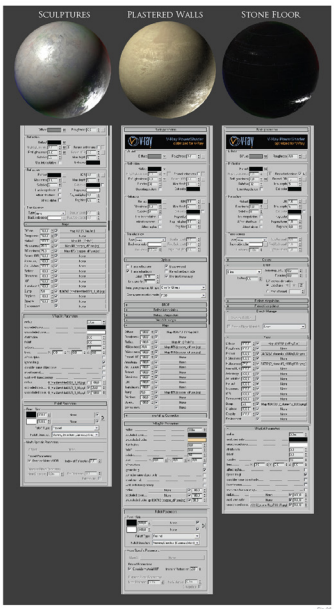

Fig.06


Fig.04

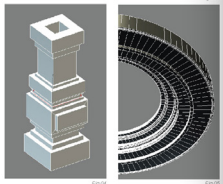
Fig.05

I used dirt maps for all the Diffuse maps to make the scene less clean and neat.

Lighting

I deliberately left the lighting until after the materials had been set up. I had of course set up some temporary lighting to check the materials, but the fine tuning was left until now. I first of all created the main ambient light with a VRay plane that was slightly tilted toward the direction of the sun (**Fig.07**).

I included several other VRay spheres with a radius of around two meters, the positions of which are clearly visible.

For the sun I used a VRay sun (**Fig.08**).

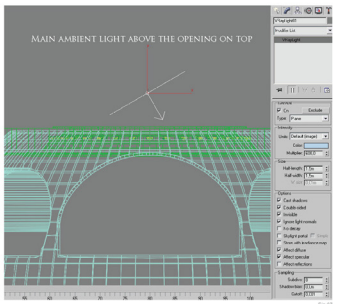

Fig.07

Rendering

There is nothing special to mention with regards to rendering, but **Fig.09** shows the basic parameters I used.

Post-production

Fig.10 shows the original render.

The first step was some color balancing and exposure control. I went to Image > Adjustments > Exposure and set the gamma to 1.2-1.5. The image then turned very bright and lost its contrast, but I didn't worry because the next step was to adjust the Color Balance. I wanted to create a different mood; a darker, more uncomfortable, and maybe even disturbing color scheme. For this I used the settings shown in **Fig.11**.


Fig.08


Fig.09


Fig.10

Fig.11


Fig.12

Light bloom: Following this I made a new layer, placed it below all the others and painted it plain white. I then color-selected the white areas in the render with a very small value range. With the brightest areas selected, I then went back to the white layer and pressed Ctrl+J to make a duplicate of the selection. I brought this new layer to the very top and made yet another duplicate. I then applied a Gaussian blur to both, one with a radius set to around 1 and the other with a radius of 7 (**Fig.12**).

Finally, I added a magenta/blue lens flare effect using Knoll Light Factory. **Fig.13** shows the result so far.

The next stage concerned the volumetric lighting. First of all I made a new layer and placed it at the top. I created an appropriate selection area (**Fig.14**) and then filled it with pure white, which was followed by some radial blur (**Fig.15**).

I then used the Eraser tool with a really high radius and a Hardness of zero and erased the bottom section (**Fig.16**).

The layer was then set to Overlay with opacity around 30-40 percent and a duplicate layer set to Normal.

The girl was based on a photograph of a close relative's child, Lil. I put her on the bench by simply using the Eraser tool and making some minor adjustments to better integrate her into the scene (**Fig.17 – 19**).

Fig.20 shows what the image looked like at this stage, with only the effects left to do.

Color balancing: For this I needed to make the scene a bit brighter. I used gamma adjustments and after that the Color Balance tool. I pulled the dark tones to the red-yellow areas and the mid-tones to blue-cyan-magenta.

Fig.14

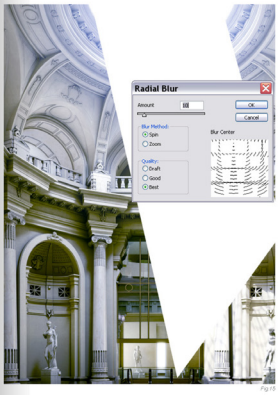

Fig.15

Fig.16

Depth of field: This was achieved through Alien Skin's Bokeh plugin, using a planar setup. There are other plugins like this but I prefer Alien Skin's because I think it makes a better Bokeh effect than the others.

Chromatic aberration: This was done using a 55mm film tool that I tried to keep as subtle as possible. I see a lot of images that are destroyed by the abuse of these effects (most of which are mine ...). My advice is to keep it low.

Vignetting: This again was done with a 55mm film tool, but there is little to write about here as it is more a matter of taste, I guess.

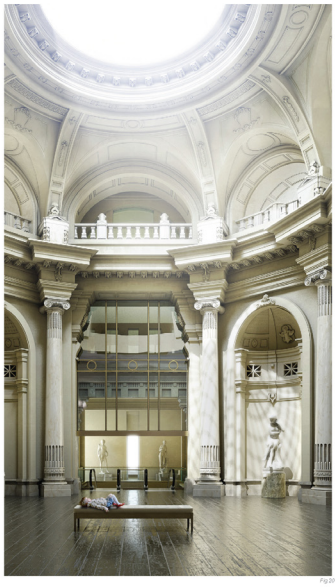

Fig.20

Fig.17

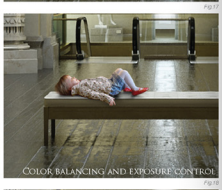

Fig.18

Fig.19

Film grain: To create the grain I used the NIK Color Effects tool. It is restricted to a separate layer that is created automatically by the plugin. It was set to between 50-75 percent with the Eraser tool used to limit the effect using a high radius, a Hardness of zero and a 10 percent flow to clear any unwanted grain; e.g., from the picture's focal point, the gate and the girl. There is in fact a lot of grain on the image overall to help fit the mood.

And then I had the final result – the completed image!

I hope you have found these few pages useful. I am currently working on an animation of this building and can't wait to see this scene come to life!

Artist Portfolio

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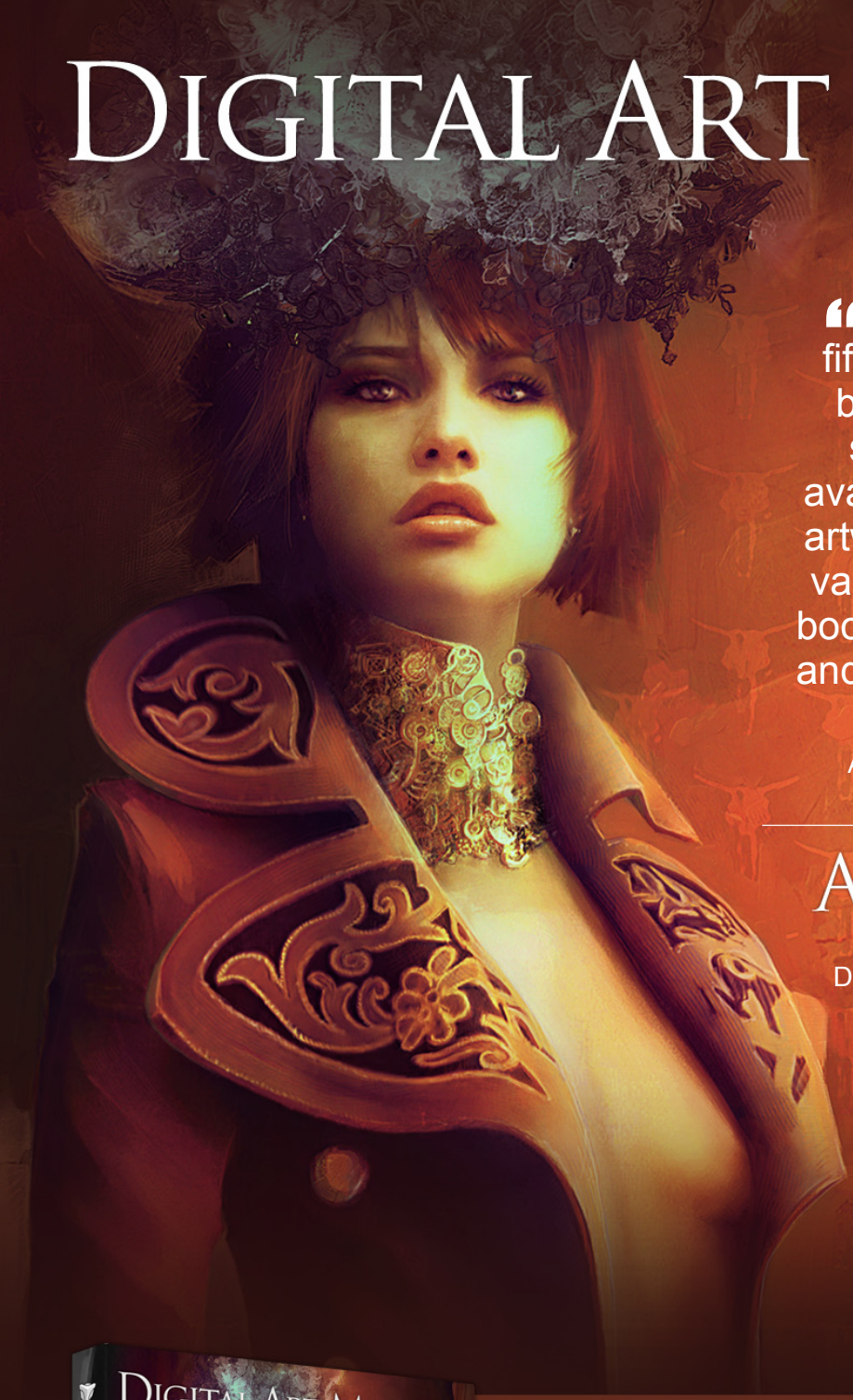
DIGITAL ART MASTERS
:VOLUME 5



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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING

3ds max

Chapter 5 - Texturing

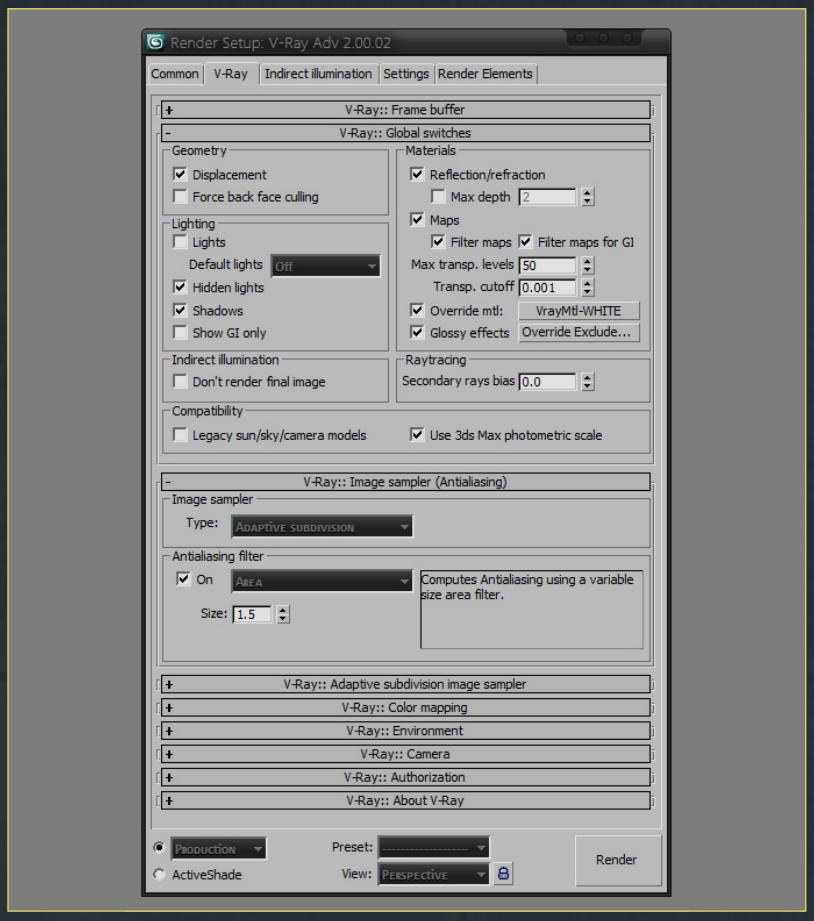
In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

CHAPTER 5 - TEXTURING

Software used: 3ds Max

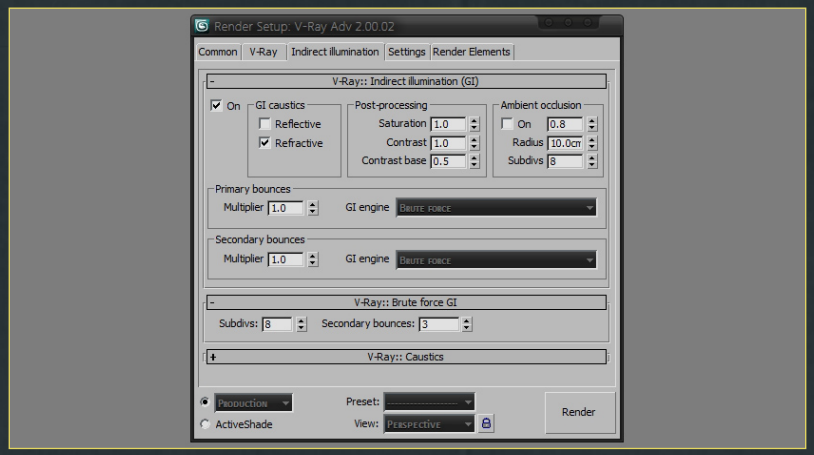
Usually I like to start the texturing process by baking out the Ambient Occlusion (AO) for all the pieces of geometry. I then use that AO map as a guide for laying out Diffuse layers and later on for Dirt and Rust layers as well. Since I'm using V-Ray for this piece we need to start by setting up V-Ray as our current renderer in Render Setup. Next, in the V-Ray tab, (also in Render Setup) under Global Switches we need to disable Lights and Default Light **(Fig.01)**.

Fig 01



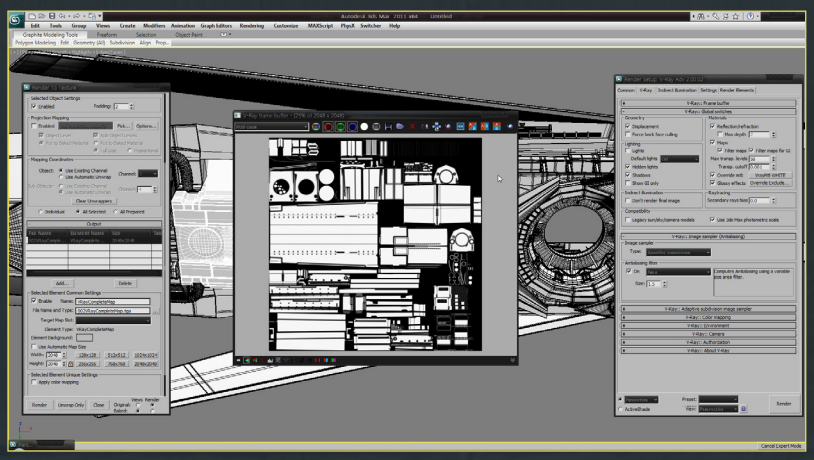
Then we need to create a V-Ray material and set the diffuse color to pure white. You can then apply that material to the whole ship or simply drag and drop it to the material override slot under the V-Ray Global Switches. Then we need to enable GI. In the Render Setup (under the Indirect Illumination tab) turn on the GI. Usually I tend to avoid the approximation methods for calculating GI. So we need to set the primary and secondary bounce engines to Brute Force. We can leave the default values for Subdivisions **(Fig.02).**

Fig 02



To open the Render to Texture dialog just hit "0" on your keyboard. Select your first piece of geometry and under the Output rollout click on the Add button. Select "VrayCompleteMap" from the list. You can specify the destination path for automatic file saving under the File Name and Type option box. Make sure to set the desired Width and Height resolution for your map. In this case I'll go with 4096 x 4096 pixels (**Fig.03**).

Fig 03

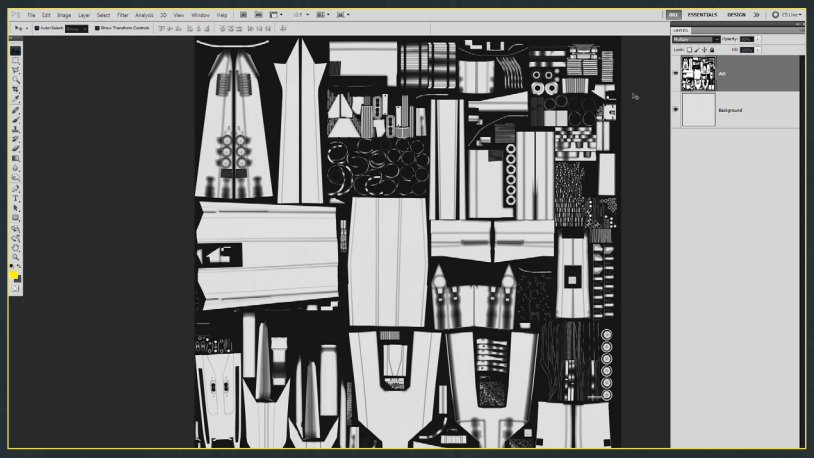


Hit "Render" (in the Render to Texture dialog, not in Render Setup) and you're done (don't forget to save your map manually if you didn't set up the automatic file saving path). Repeat the process for the other geometry pieces.

Once we have all our AO maps rendered out it's time to move on to texture painting. We can start by opening the first AO map in Photoshop.

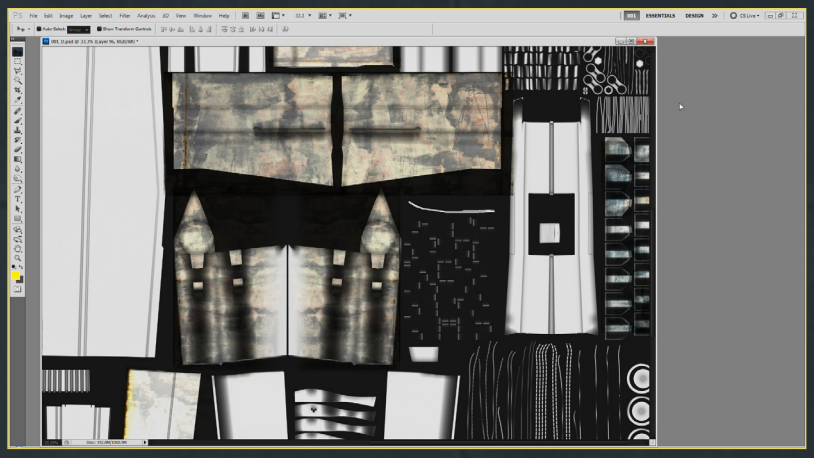
Hit “Ctrl + J” to create a layer copy of the map. Fill the background layer with a light gray color, which is going to be our diffuse base. Then select the previously duplicated layer and set blending mode to Multiply. The AO map will then be multiplied on top of the base color (**Fig.04**).

Fig 04



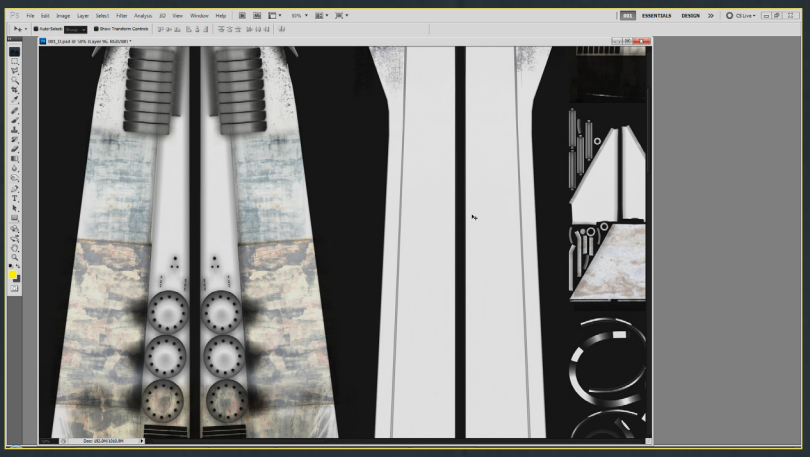
Now we should add some base paint variation/ surface irregularities in order to achieve a weathered look for our ship. I have a personal archive consisting of thousands of all kinds of images (gathered from a bunch of different sources including www.3dtotal.com) that I use for texturing. For a first layer of paint variation I used maps. You can use whatever you like as long as it has similar surface properties.

Fig 05



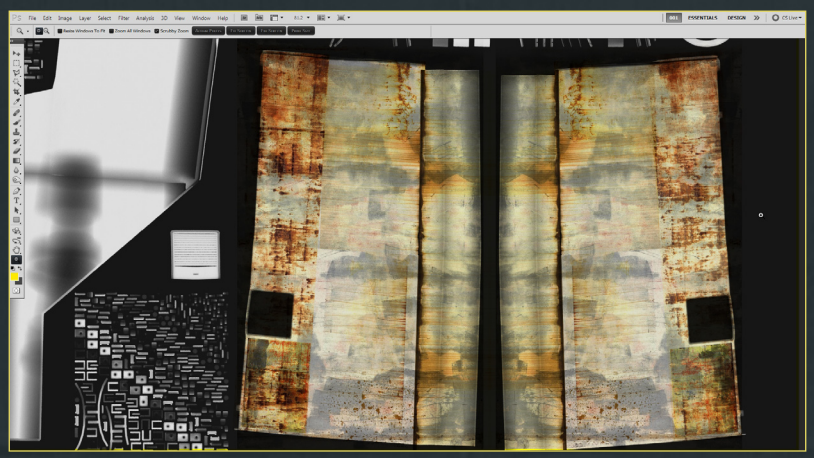
I opened up those images in Photoshop and dragged (simple drag and drop with the Move tool) those over to a file (with base and AO) that we started to work on earlier. I’ve set these new layers to Multiply blending mode, as well and put them below the AO layer. Using the Move tool you can put them in the exact location that you want. You can also duplicate those layers until you cover all the surfaces that you want. Also you can use the Erase tool to delete bounding edges from these layers (**Fig.05 – 06**).

Fig 06



You can play with the Levels or some other Adjustments tools to tweak the look to your own liking. You should now repeat the process to cover all the parts of the ship. Also it would be a good idea to have some light rig setup back in Max so that you can occasionally test out how the textures look when rendered.

Fig 07



When you’re done playing with the basic paint variation it’s time to move on to adding some dirt and rust. The process is the same as we have done with the paint. You should find some interesting images of rusted or dirty metal. When dealing with rust I like to organize things based on scale so I usually have small scale, mid-scale and large scale rust. I like to start with the large scale first, by placing all the biggest rust parts on the surface, using the AO map as a guide

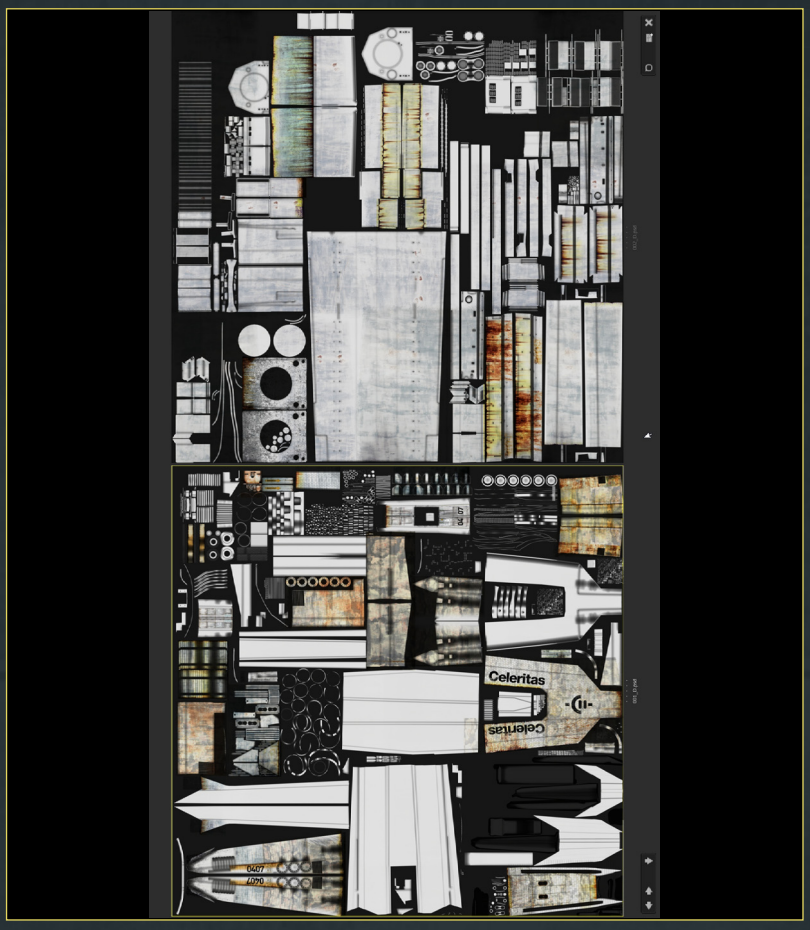


Fig 08

and also checking back in 3ds Max and doing quick test renders.Next I make sure to put some rust and leaks in corners or on to places where two surfaces meet. On top of that I also added some mid-scale rust (**Fig.07**).

When satisfied with what you have you should also add some small scale rust or scratches all over the ship for an extra level of realism. I should maybe point out here that you should really experiment with as many maps as possible… play around with placement, scale, different blending modes and opacities, and don't be afraid to use the Erase tool or Clone Stamp tool to tweak the maps to your own liking.

Generally I like to add dirt layers when I'm satisfied with the rust. The process is exactly the same as before. So after a few hour of playing this is what I had (**Fig.08**).

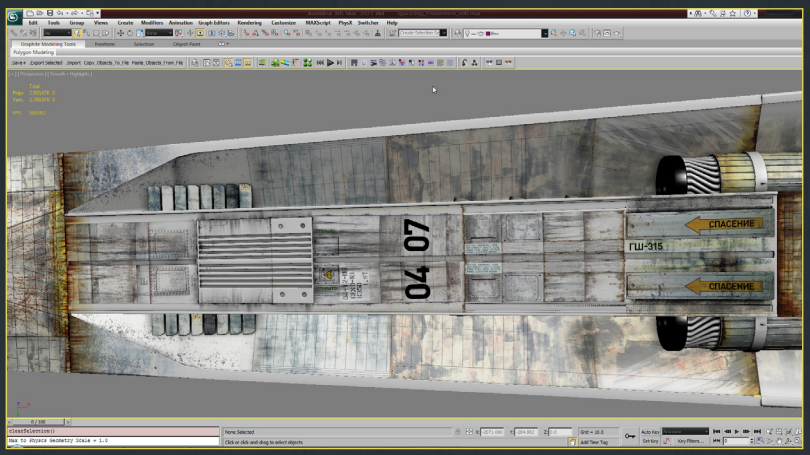


Fig 09

Notice that I also placed some typography between the rust and dirt layers and I also "damaged" it a bit using the Erase tool. You can add typography by using the Photoshop Type tool. But in order to do some damage effects on it you need to convert the type to a standard bitmap by going to Layer > Rasterize > Type. You can also use some custom or free Photoshop brushes in order to achieve a realistic damage.

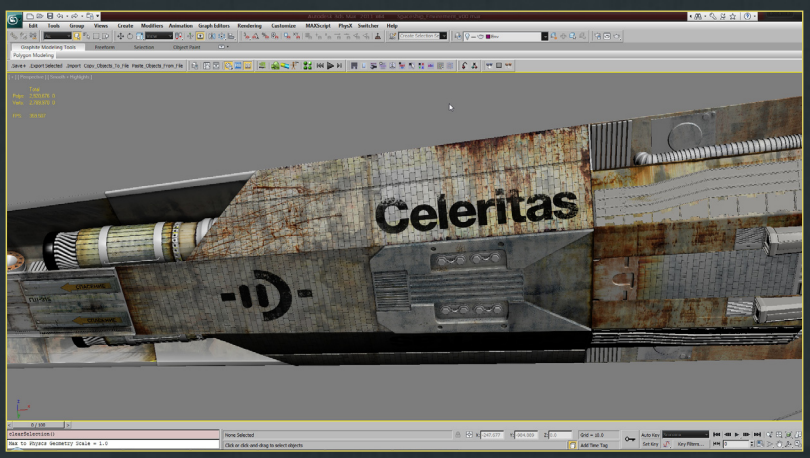
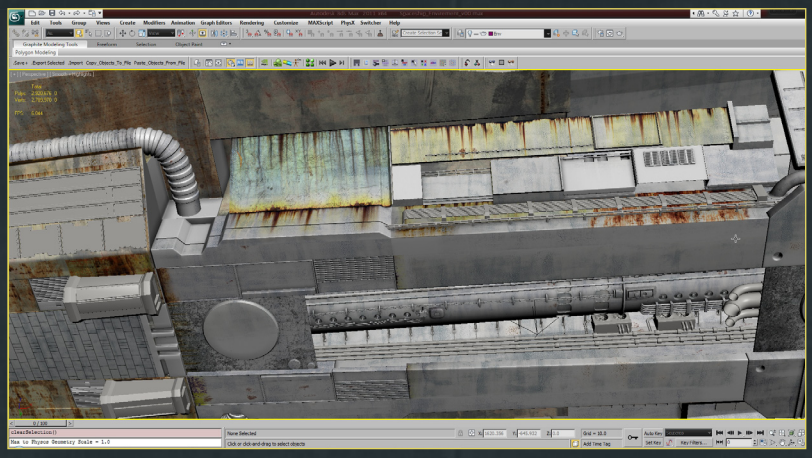


Fig 10

You should cover the whole (or at least the visible parts) of the ship using these techniques (**Fig.09 – 12**).

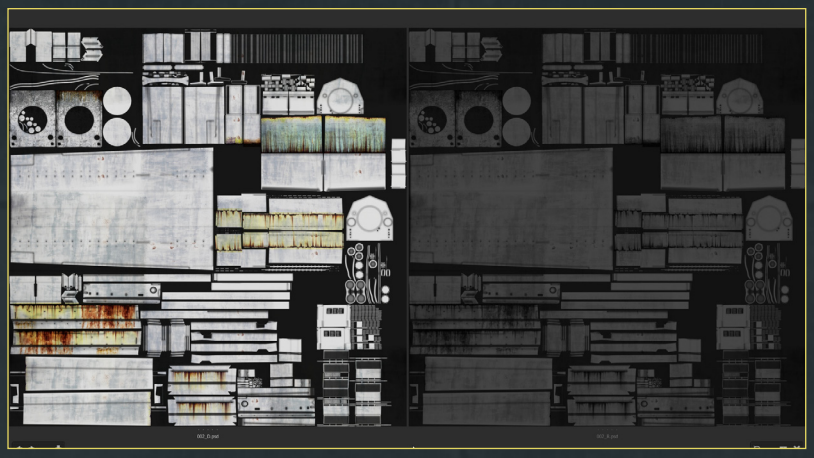
Now we also need to add some Reflection and Bump maps as well. Reflection maps will add an extra level of realism to the look of the ship by making the surface less or more reflective in certain spots. The Reflection map works in a way that brighter parts of the map are more reflective when rendered and darker parts are less reflective. Black means no reflection at all; white is a complete chrome-like reflection.

Fig 11



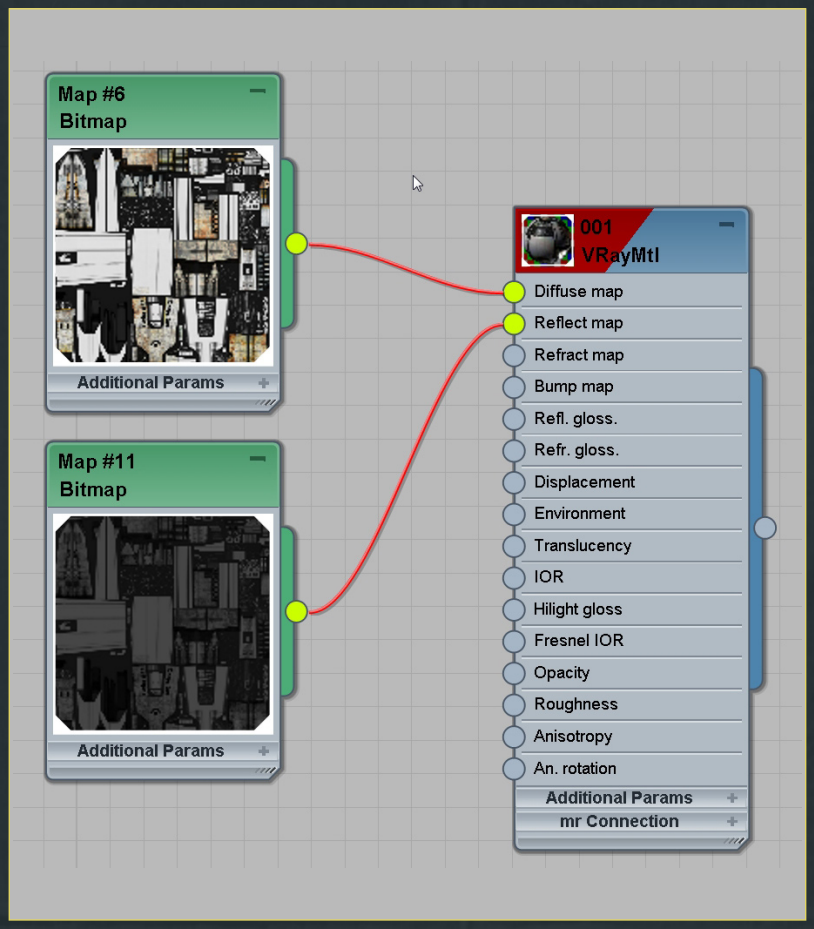
The easiest (though certainly not the best) way to do this is to make a copy of the Diffuse map, convert it to a grayscale image and put it in the Reflection slot of a VrayMtl (**Fig.13**).

Fig 12



The Reflection map doesn't have to be grayscale image; it can be color as well but bear in mind that the color/saturation of the map will greatly influence reflections. I recommend going with grayscale as a starting point, doing a quick test render and then tweaking the opacities and saturations of certain layers from there until you get the satisfying look.

Fig 13



Bump maps work similar to reflection. Darker parts of the map will create recesses on the surface and the lighter parts will create bulges. Now, based on what you want to create you can approach bump mapping from several different direction. I like to start from a Diffuse map (like with reflection), convert it to grayscale and tweak it from there. Now since I planned to do a final shot of the ship with a wide lens that is placed far away from the ship, doing tiny bump details didn't make much sense. However I did use Bump maps to create some extra panels on the surface of the ship. Using the Line tool I drew a bunch of tiny panels and placed them in a few places on the ship (**Fig.14**). Basically that's the only reason I used bumps on this project – to add extra panels.

Once you have your bump ready you should plug it into a bump slot in your VrayMtl (**Fig.15**). Don't forget to play around with opacity values for all three maps that we used.

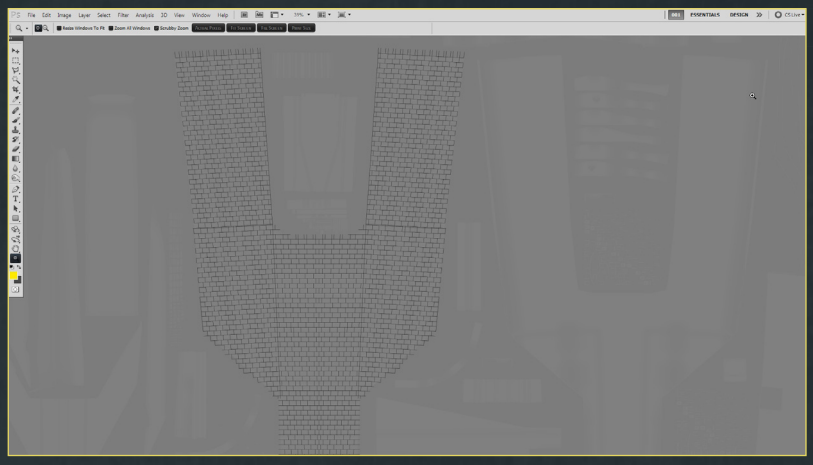


Fig 14

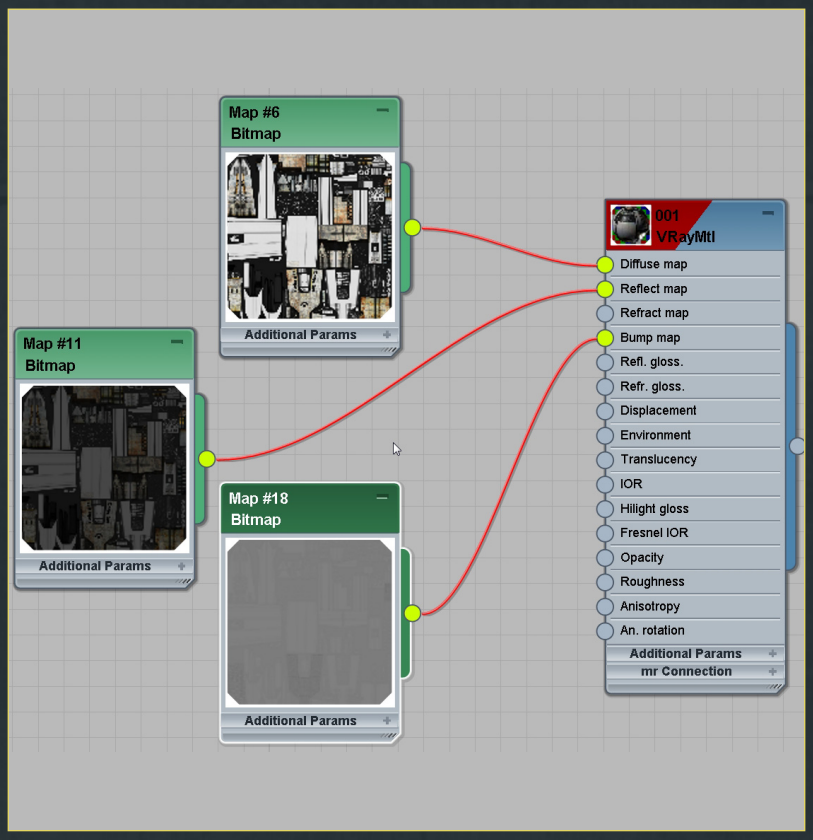


Fig 15

At the end I should maybe point out few things. First of all you should start your texturing process by collecting as many reference images as possible. By reference I mean anything that is a similar material type as the one you are texturing. Once you have a decent reference library you should analyze it in order to identify all the visual details that you can later on recreate in your own work. Generally a good way to categorize details is to divide them by size, damage type, scale of the surface deviation etc. So damage types, for example, could be water damage, rust, damage from scratching, friction or collisions etc. A good example for different deviation scales of the surface is a rock or a mountain, which has a hierarchy of surface deviations. Identifying and categorizing these visual details will greatly help you latter on it the process. Also I recommend creating a light rig prior to texturing and constantly doing test renders. Different light conditions can have a profound impact on your textures especially on your Reflection maps.

And finally you should think seriously about creating your own archive for maps and references.

DJORDJIE JOVANOVIC

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http://djordjejovanovic.com/
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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING

Chapter 5 - Texturing

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

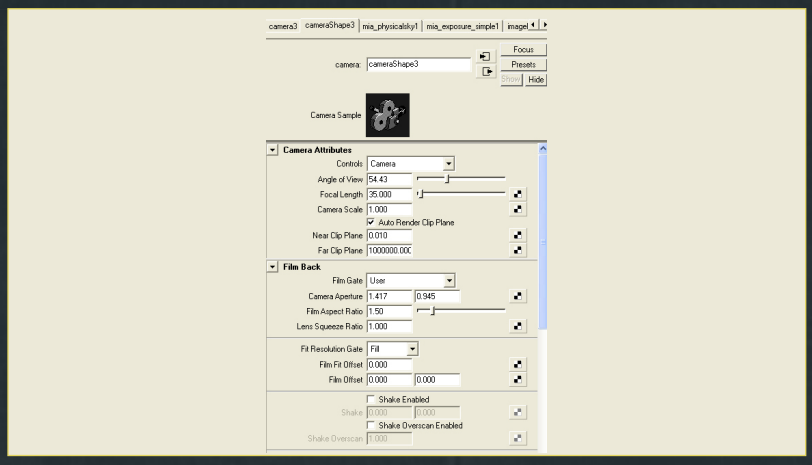
CHAPTER 5 - TEXTURING

Software used: Maya

LIGHTING & RENDERING

Once your model is shaded it's time to make a series of test renders to see if your shaders work properly. To do this it will be enough to activate mental ray from the plugin manager and to create a camera: Create > Cameras > Camera. Once created from the Panels tab choose Perspective > Camera 1.

Fig 01



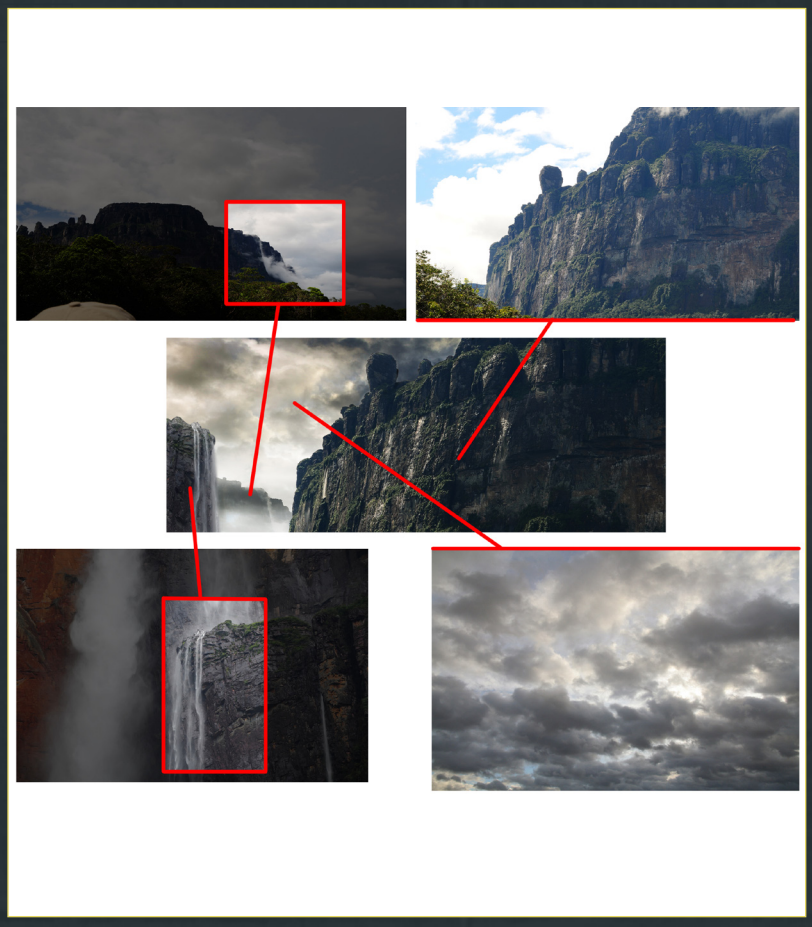
The camera works in the same way as the perspective view (so remember to increase the far clip plane if you've been working in a big scale), plus you'll have a series of attributes to set, depending on the effect you want to give to your picture. The most important parameters to get familiar with are: Angle of View, Focal Length and Camera Scale. Angle of View and Focal Length are proportional and by increasing Angle of View you'll obtain more of a fisheye effect.

Fig 02

Changing Camera Scale will change the proportion between the camera and the object, so you'll have to set your camera to match the model's scale to achieve a more realistic effect. **Fig.01** shows the settings I have used for my final camera.

You can even try a Film Gate preset that may help you to get more familiar with Angle of View and Focal Length proportion. Now open the Render Settings tab by clicking on Window > Rendering Editors > Render Settings. In the upper side of the tab you'll have to choose Render Using > mental ray. You can start to make a series of test renders now, using the mental ray default settings, to check how the camera works and to find some good shots. A good thing to do would be to start thinking about your environment now; this way you'll set the camera depending on the environment too.

Fig 03

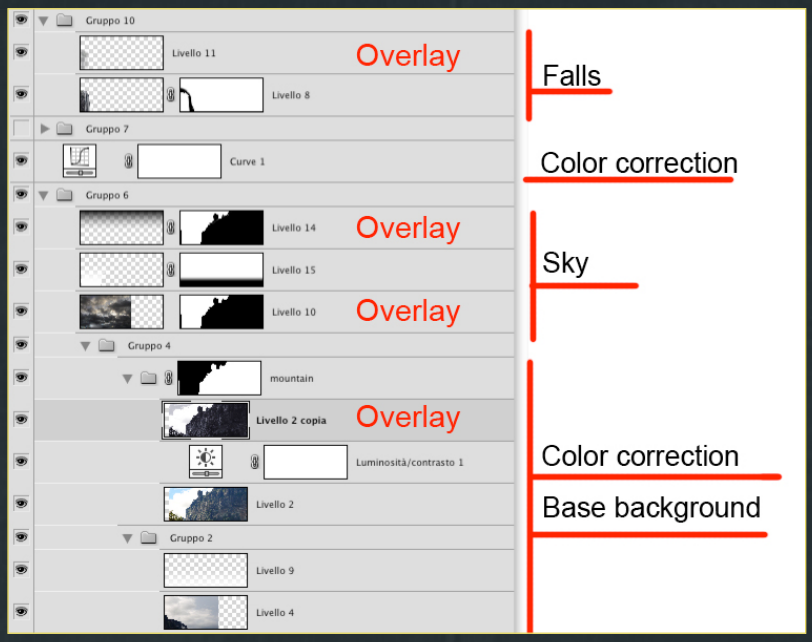


My personal solution has been the following: Since the ship has a large amount of detail I've decided to make my final render of the back. I wanted to portray it whilst it was docked, to show its size. So I took a couple of pictures that a friend took in Venezuela (thanks Cristian) and have prepared a background in a 16:9 based proportion (**Fig.02**).

I've chosen the pictures depending on their perspective and have mounted them as you can see in **Fig.03.**

In **Fig.04** you can see how I've set the layer

Fig 04

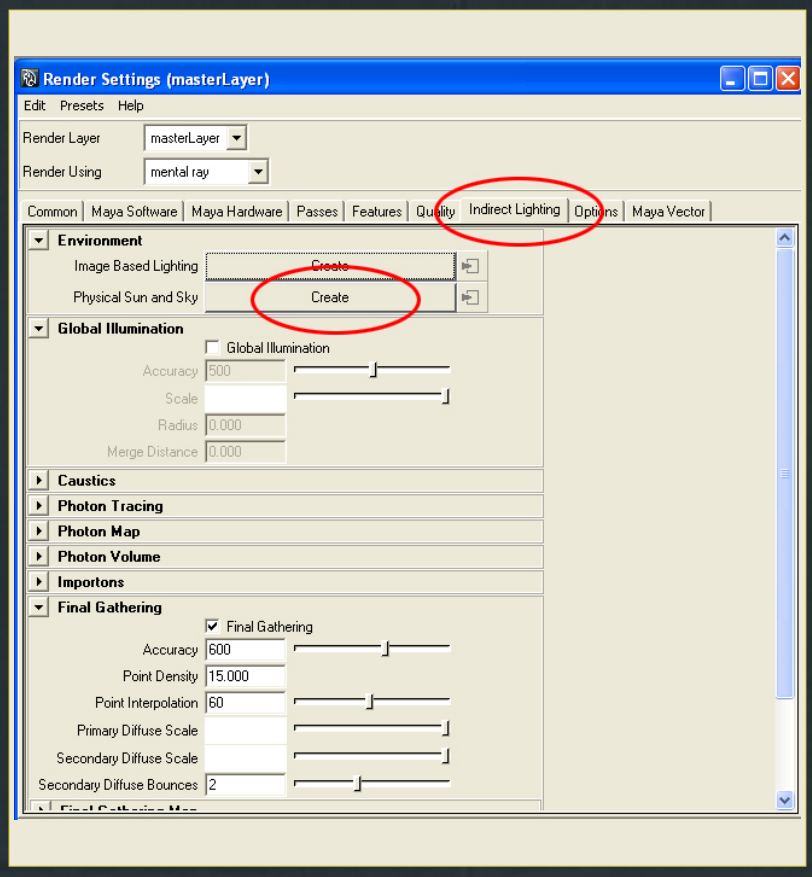


Once your background is ready you can set it as the environment in your scene. Go back to Maya and in the Camera rollout under the Environment rollout hit "Create". The background will appear in our scene. Notice that the image plane is linked with the camera, so you'll have to move the camera until you match the camera and the model (**Fig.05**).

Fig 05

Now let's set the lights. The light set I've decided to use is based on the Physical Sun and Sky preset that you can find in the Indirect Lighting tab of the Render Setting window (**Fig.06**).

Fig 06



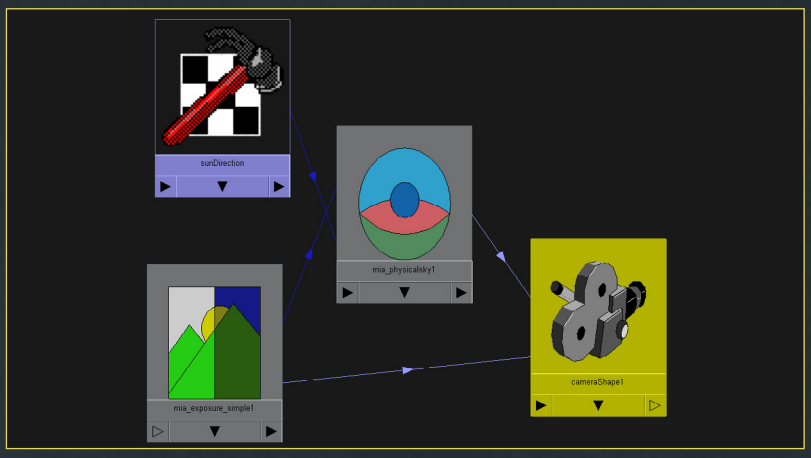


Fig 07

Click on “Create.” Physical sun and sky is really easy to use and gives excellent results on daylight exterior scenes. It automatically creates two networks. One network adds a series of controls to your camera (**Fig.07**).

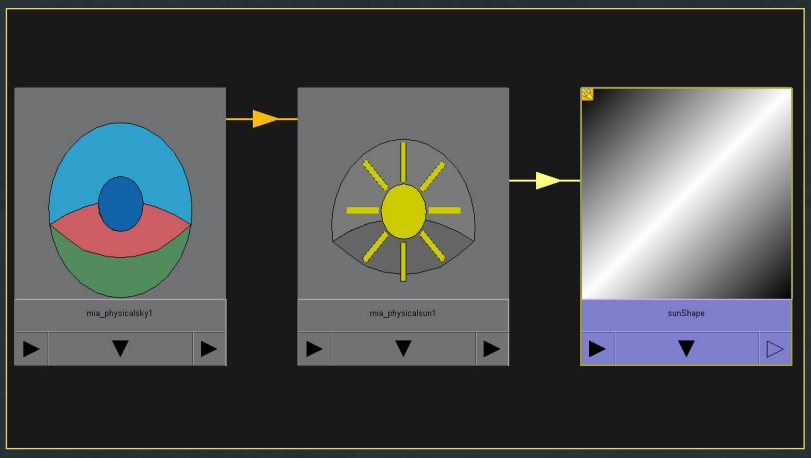


Fig 08

The other one is based on a directional light created automatically with the Physical sun and sky preset (**Fig.08**).

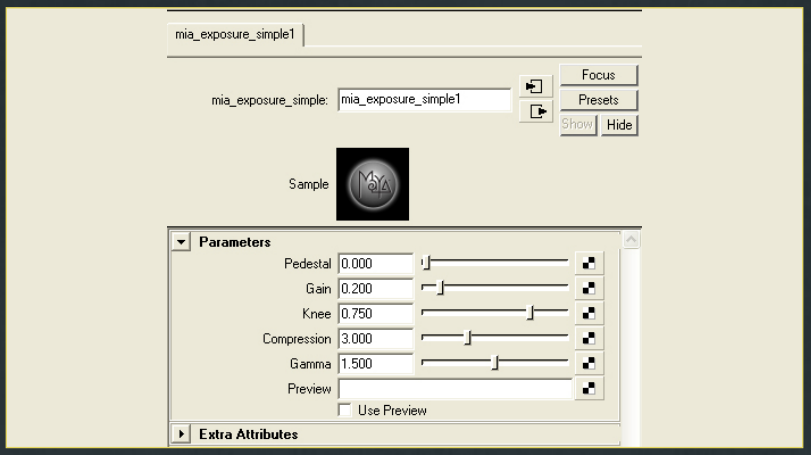


Fig 09

As you can see, both of them have the “mia_physicalsky” in common. The great feature of physical sun and sky is that if the light’s inclination changes it influences the whole scene’s illumination. Of course we have to adjust a couple of settings: “mia_exposure” first, in order to avoid a overexposed scene. In **Fig.09** you can check my settings.

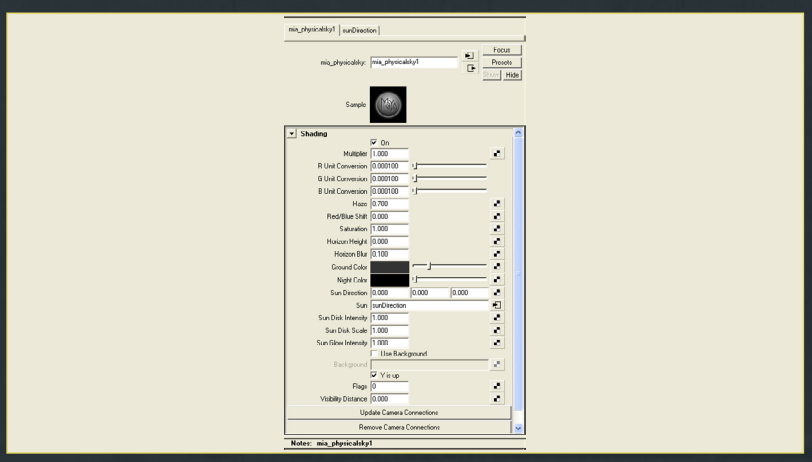
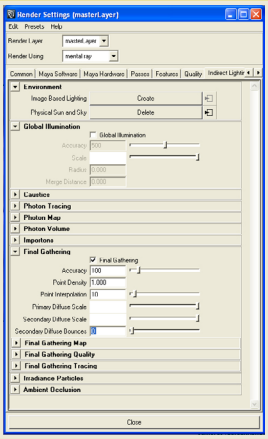


Fig 10

Here you can see the “mia_physicalsky” (**Fig.10**).

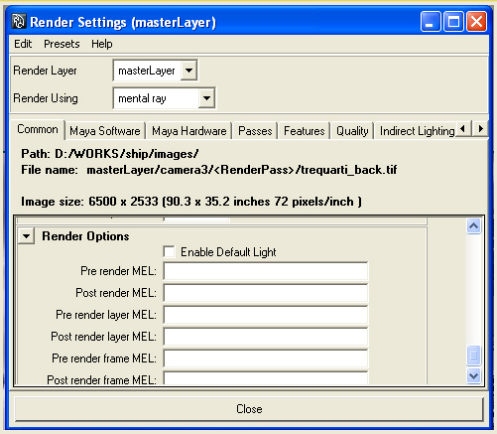
As you can see I've just changed the Gamma value and the Haze. All the other values are set to their default settings. The Physical sun and sky creation should have also activated another function under the render settings: Final Gather. If it hasn't then click on the flag and activate it (**Fig.11**).

Fig 11



Once you have activated Final Gather, remember to switch off the default light and we're ready to launch the first test render (**Fig.12**).

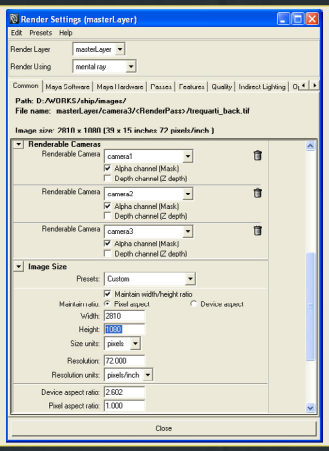
Fig 12



The first thing to change is the light's direction and inclination, in order to align it to the environment's lighting.

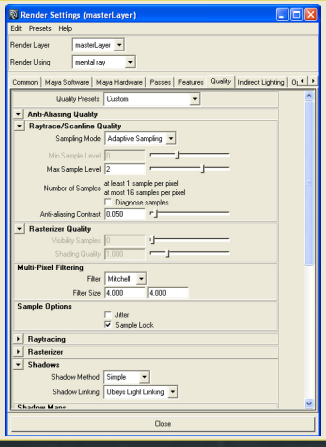
NOTE: If your directional light icon is much too small you can scale it ("R" key, like any other object in the scene). Next go to Render > Render Current Frame. It is really important to keep the mental ray settings low until you decide on your final views, because Final Gather is really time-consuming. Once you're ok with your light set it's time to think about your final renders. First change the image size and choose the render-able cameras (**Fig.13**).

Fig 13



The default one is "perspective"; you can add the camera by clicking in the Perspective rollout and choosing "add render-able camera". To check how the scene will be framed go to View > Camera Settings > Resolution Gate. Next go to the quality settings (**Fig.14**).

Fig 14



Set the adaptive sampling to 2. Set the Anti Alias Contrast to 0.05 and use the Mitchell filter under the Multi-pixel filtering rollout. These settings will give more detail to the render, but they'll take a long time to calculate, so if your machine takes a long time to render you have two choices: decrease the render dimensions or decrease the sampling values and use a box

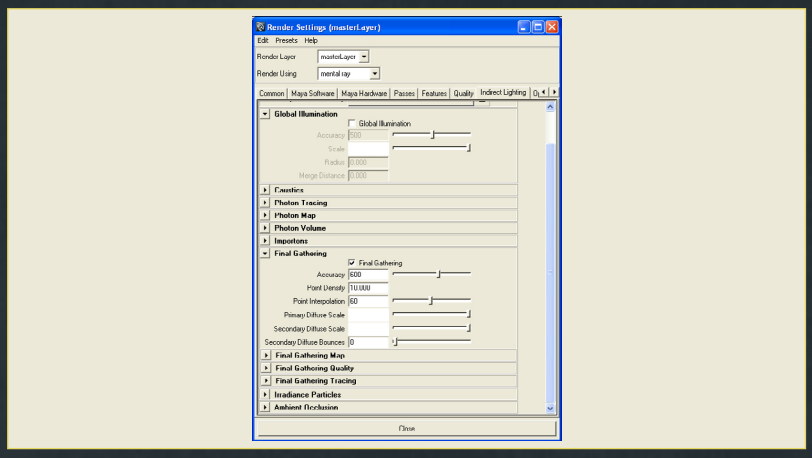


Fig 15

filter instead of the Mitchell one. Now arrange the Final Gather settings. Point Density and Point Interpolation are really time-consuming, so you have to increase your values depending on the scene's size and the render's size. Don't increase them too much if you don't want to make a render much too big. Accuracy also works in that way, so you'll have to find the right proportion between these three factors. Secondary diffuse bounces influence the overall lightness of the scene. In this case they are set to 0 because in an outdoor scene I prefer to have darker shadows. **Fig.15** shows the settings I've used.

Fig 16

Hit "Render" again. To make a further check before launching the final render you can use the IPR render (Render > IPR Render Current Frame). IPR allows you to render single regions of your scene, updating the part of the scene you're rendering in real time while you adjust the lights or the shader settings. Do not use IPR Render on render settings too big for your machine, or it will crash Maya (so remember to save a copy of your scene before starting with test renders). These are my results (**Fig.16 – 18**).

Fig 17

Fig 18

Now it's time to activate a couple of passes to improve the final render's look. Render passes are really useful: they allow you to render separately a series of aspects in your scene. The passes are really fast to calculate, so they can be re-rendered separately instead of launching a full, time-consuming render. The most popular ones are Ambient Occlusion (that calculates the shadows of the scene) and Depth of Field. There are many others you can work with, but in our scene these two passes will be enough (in a still image, many details may be adjusted by hand in Photoshop). More passes may be useful in animation where it may be easier to use a pass to calculate Specular Reflections for example, instead of re-rendering all of the scene. First of all let's set the render layers by clicking on Window > Rendering Editors > Render Layer editor. Render Layer lets you to split different parts of your scene into layers and to render them separately. So select all your ship and then click on Layer > Create Layer From Selected (**Fig.19**).

Fig 19

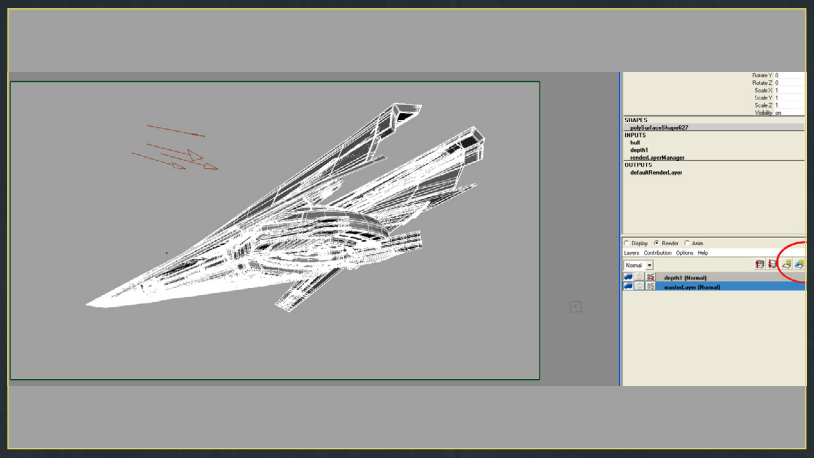
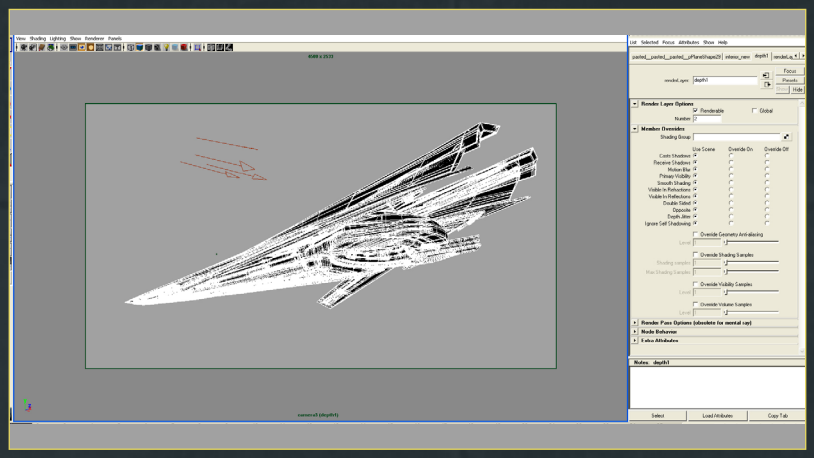


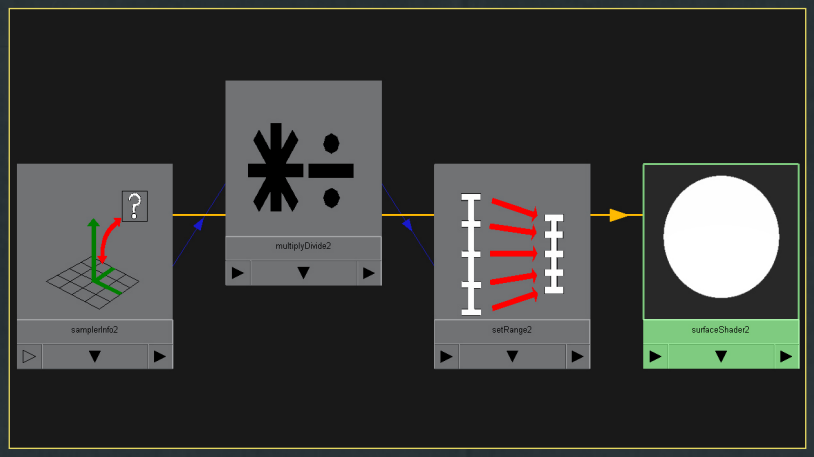
Fig 20



Select the new layer and rename it "depth" and open the Attribute editor (**Fig.20**).

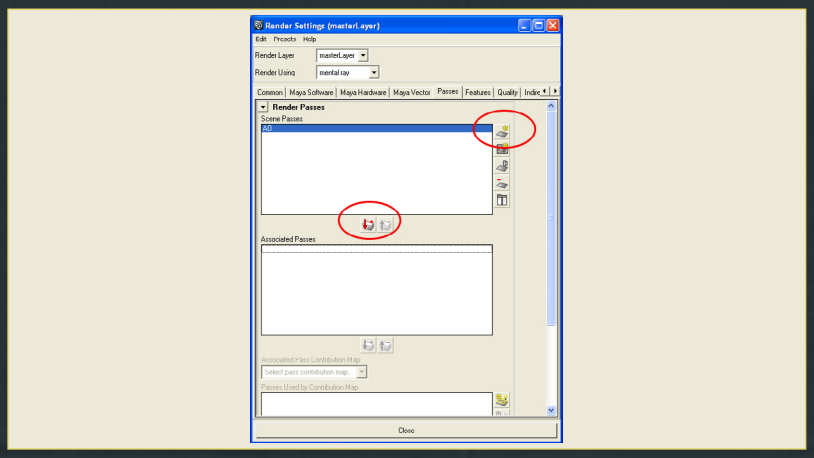
Click on the preset button and choose "Luminance Depth". You'll notice that your model will change its aspect, as Maya has just assigned a new material override to all the layers (**Fig.21**).

Fig 21



To calculate the Ambient Occlusion you can use two different methods. The first one is to create a new render layer as previously done and to assign the Ambient Occlusion preset. The second way is to try a feature that Autodesk introduced in the latest version: render passes. With render passes you can add a series of passes to each render layer. The logic that stands between this evolution is that you can decide to add a series of passes just for some objects in you scene, so you can decide to render just those objects with some passes assigned to them without rendering the whole scene. To add the Ambient Occlusion as a

Fig 22



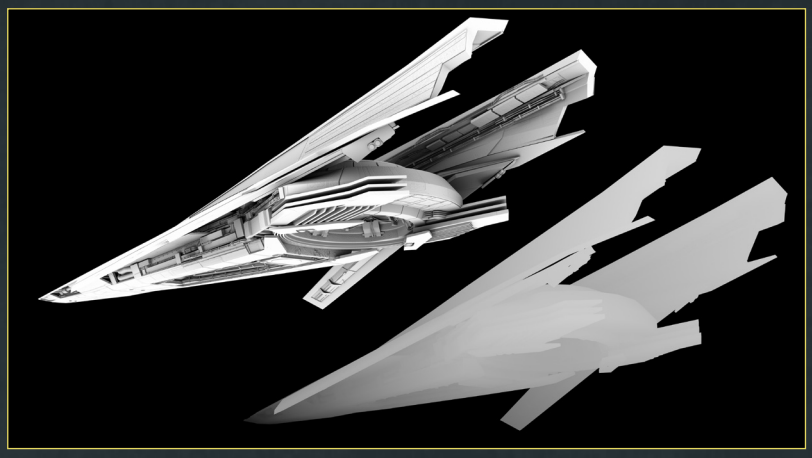


Fig 23

render pass in you scene just right-click on the Master layer and choose Add New Render Pass > Ambient Occlusion.

Now if you open the Render settings window, under the Passes tab you'll see that in the "Associated passes" window there is written AO. If you want to add some other pass you can do it from here by clicking on the "Create new render pass" icon and choosing some other passes. Once you've chosen it, click on the Associate icon to associate it to your render layer (**Fig.22**).

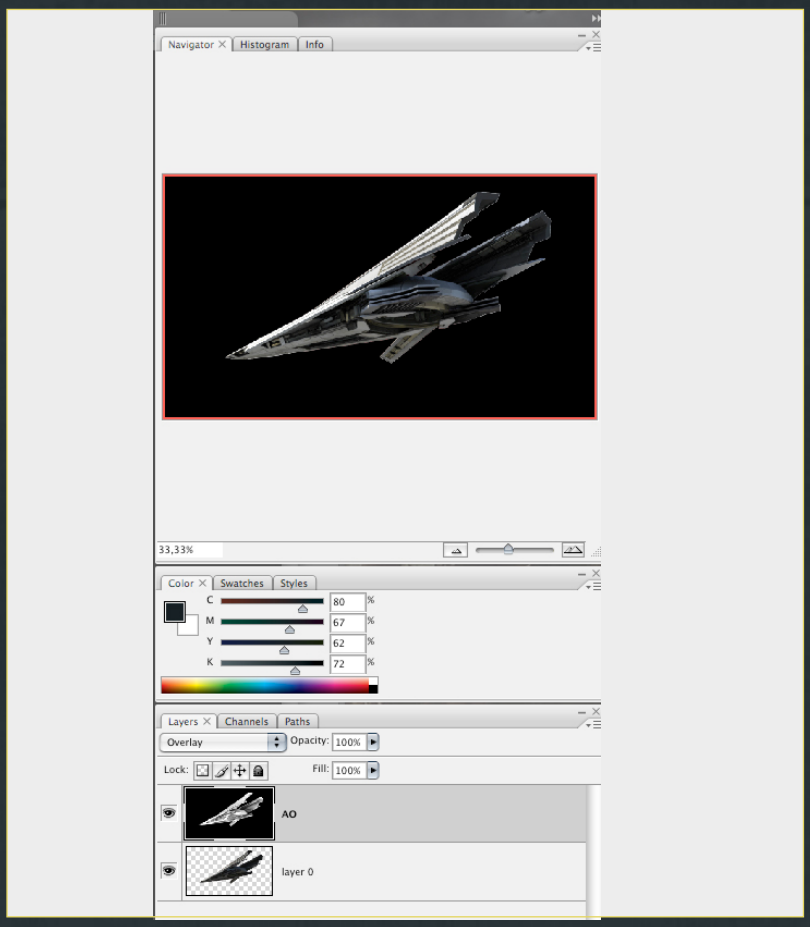


Fig 24

There are another couple of differences between render layer presets and render passes. Render passes are optimized for mental ray, but render layer presets work well even with the Maya software renderer. Render passes work at their best with "mia_material_x_passes" while render layers may be used with any kind of material. On the other hand, with render passes you can control a larger amount of single aspects, whilst with render layers you have less options.Once settled on all your passes and layers, set all your settings to the highest values and hit Render > Batch Render. With Batch render you won't physically see the render, but you can check the render's state from the Script editor (Window > General Editor > Script Editor).

Note: Sometimes Maya crashes whilst rendering from the render current frame feature because creating the render preview employs a large amount of RAM. If this happens, try using Batch Render even with a single image to be rendered without layer passes; it may fix your render crashes. Once you see "Rendering Completed", go to your render directory (you can find the path in the Common tab of the render settings, under File Name) and open your AO (**Fig.23**).

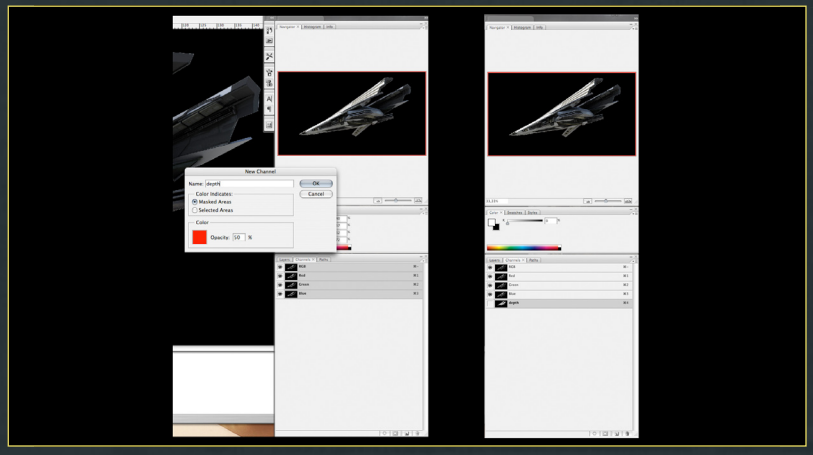
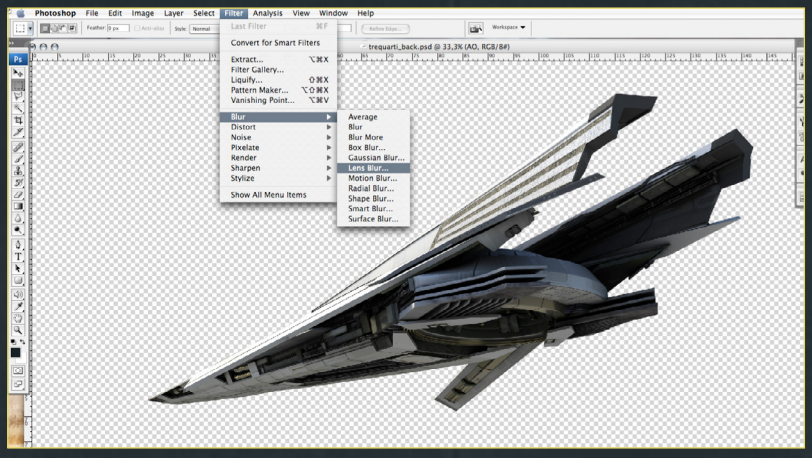


Fig 25

Now open Photoshop. Open the Master beauty render, paste the occlusion level over it and set it to Overlay mode. You can change the opacity amount to adjust it, or you can also use the curves to change its intensity (**Fig.24**).

Open your AO and copy it, then go to the Master Beauty image, open the Channels tab and create a new channel and rename it “depth” and paste the depth render into it (**Fig.25**).

Fig 26



Now click on Blur > Lens Blur (**Fig.26**).

In the Lens Blur window, set the Depth channel as “Source” in the Depth map rollout (**Fig.27**).

Fig 27

Set it as shown in **Fig.28.**

Fig 28

Fig.29 shows how your final result should look.

Fig 29

As a final thing you can paste your ship into the environment you’ve created. Add some sci-fi stuff, and then paint on a few more effects **as** seen in the final image**.** And we’re done with our spaceship.

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CREATING THE CELERITAS

SPACESHIP MODELING & TEXTURING

Chapter 5 - Texturing

In this fascinating tutorial series our artists will be guiding us through the creation of a complete spaceship in a scene, from beginning to end. We begin the series in Photoshop, using some of its excellent features to help create a concept, a vital process for anyone hoping to come up with an original design. That design is then passed on to our team of modelers who cover the stages of low and high poly modeling, texturing and post-production. This series is filled with tips to help during all of the stages leading up to the creation of an amazing sci-fi scene with an original spaceship.

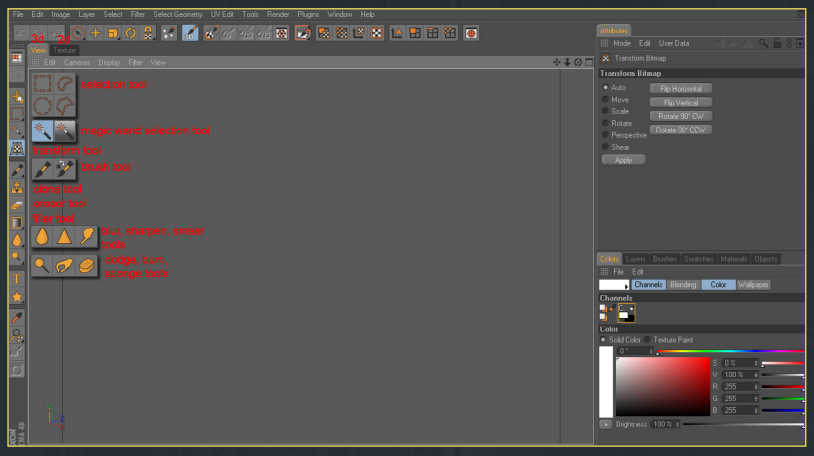
CHAPTER 5 - TEXTURING

Software used: Cinema 4D

In this chapter we will look at how to texture the spaceship. If you are a Cinema 4D user you will by now be very familiar with the software. The Bodypaint tool is a useful module in C4D which can be used to paint textures and, of course, Photoshop is perfect for this phase. I prefer to use Bodypaint to create textures because on one surface I am able to paint, add a shade and to render. And of course, the texture bake will happen in Bodypaint.

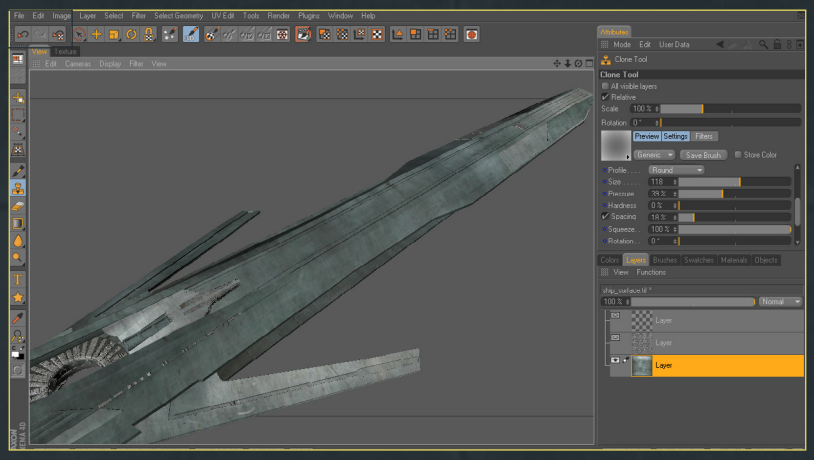
Before we start, let's see what tools we have inside Bodypaint. The tools are almost the same as in Photoshop. Actually I think they have about the same usability (**Fig01**).

Fig 01



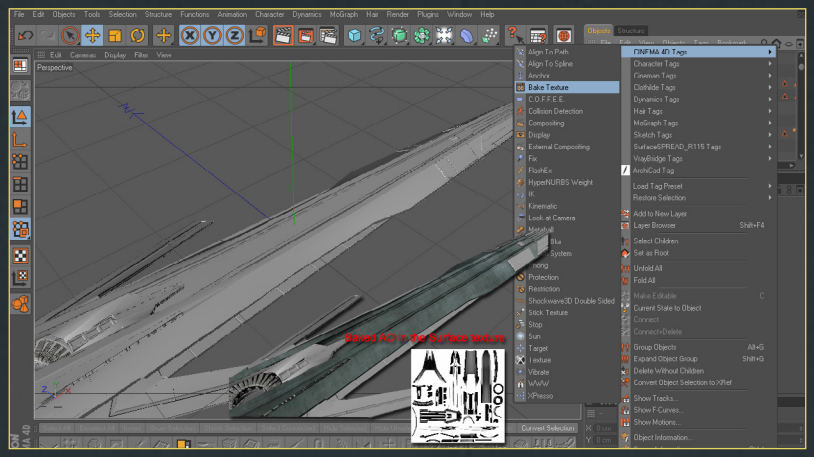
The base map is the Diffuse. We should choose a good, almost sterile, basic texture to create a base layer (**Fig.02**).

Fig 02



Let's see how we should paint in the detail in a specific region. In our case we will choose a simple metal texture. Create a new material and name it "base_surface". Now, in the Diffuse layer, create a texture. In this case the resolution was 2048 x 2048. Go to Bodypaint. Here you can see the material in the lower right corner. There is a red cross next to this. Click on this and now you can see that the texture has become sharper and paintable. The first step is to create an AO map. This is very useful and looks beautiful on our texture. Use the Bake to Texture tag to create your AO. After you have done this, merge the AO to the basic metal texture. Click on the Background layer and choose Textures > Merge Texture. Now we can see the AO on the surface in real-time. This filter is very useful to create burn and dodge effects (**Fig.03**).

Fig 03

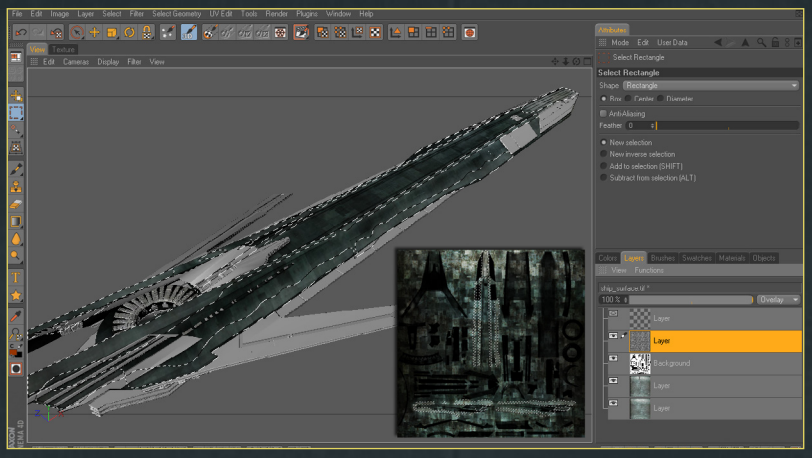


Now, create some surface abrasion. Duplicate the basic texture and erase the parts you don't need (**Fig.04**).

Fig 04

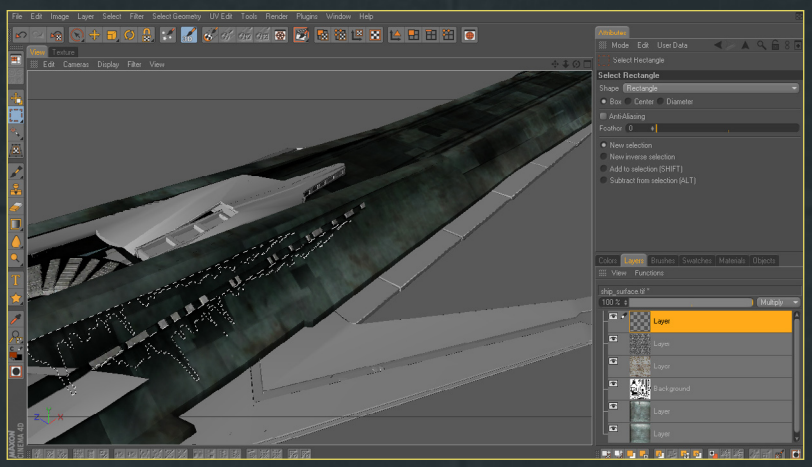
After this, do an additional surface detail texture. Create a selection on the duplicated basic metal texture. Click on it with the right button and choose “Selection” from Layer. This command selects the layer’s content in a perfect shape. After you have done this choose the Invert All command from the Selection menu. By doing this we can get the abrasion surface’s places. Move to the detail layer and erase inside the selected parts (**Fig.05**).

Fig 05



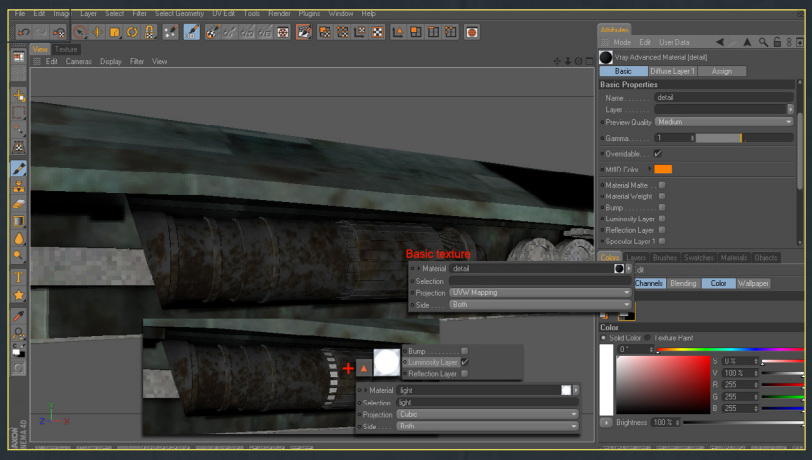
The next step is to create some dirt and color the surface. Set a rustic metal texture to the basic texture in Overlay mode. Then erase the areas of abrasion. This step should create some atmospheric surface dirt (**Fig.06**).

Fig 06



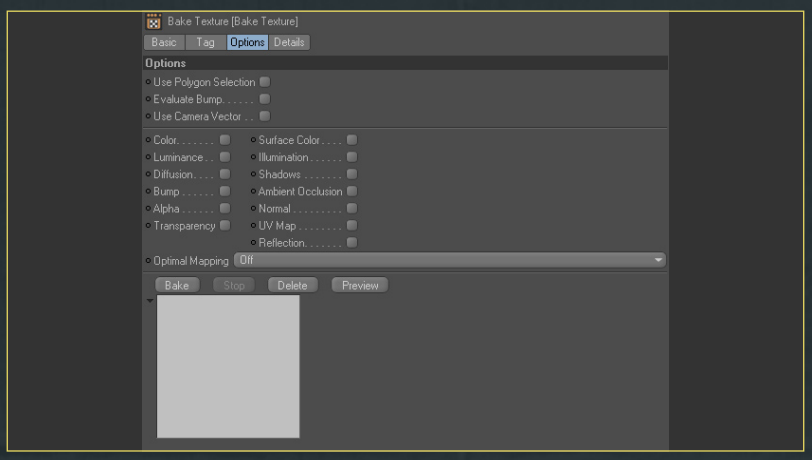
Ok let’s see a different type of detail creation. The Polygon Selection is a very useful tool to define polygon groups. This group becomes split-able, more editable and by doing this we can create multi-textures without UVs or painting. This selection is also needed for the polygon-based texture bake. Let’s see how we can create fake light on the surface. By using the luminosity (self-illumination) we can create light. By using Global illumination in the render these illumination maps, or the selected polygons, work as a type of spot lamp. This is very good because we don’t need a mass of lights, which cause huge render times.

Fig 07



Switch to Poly Edit mode and select the parts that want to make bright. After this select Menu and choose the Set Selection command. Now we have a filled red triangle next to the object. Rename this selection as “light”. Take a material with luminosity to the object and inside the material add this selection to the selection cell. Now this illumination shader will appear only in the selected region. If you create a test render with GI, you can see the outcome (**Fig.07**).

Fig 08



We can bake this selection for the UV map and we will be able to paint it on the final texture. The texture bake is always needed for UVW map coordinates (**Fig.08**).

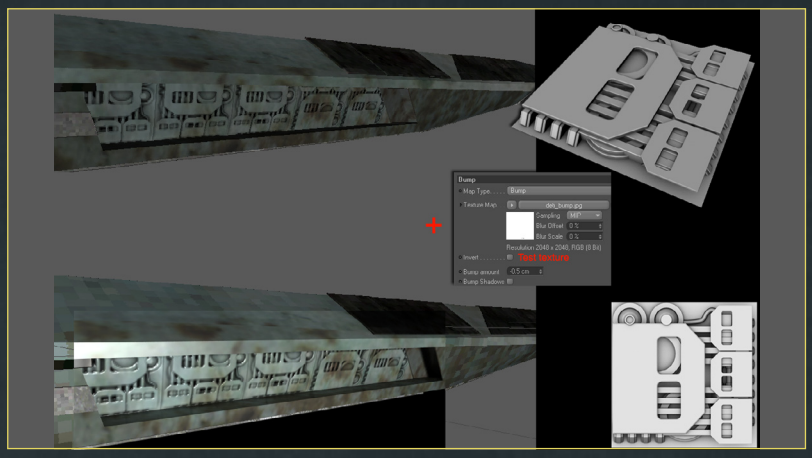


Fig 09

Next we will see how we should create 2D elements on the surface, and use them as 3D details. First of all we create the detailed structure in 3D using simple elements and objects. There is no need to unwrap these objects and also no need to use shaders. We should create almost flat objects. Create a Top render from this detailed structure. After you have done this create a new layer inside the base material and merge this image on it in Multiply mode (**Fig.09**).

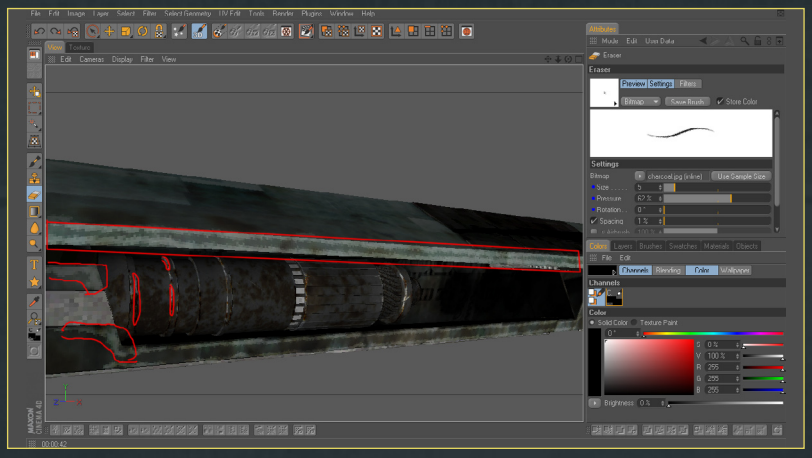


Fig 10

After this we should create some hard edge abrasion. Choose a Charcoal Alfa brush, and erase the texture around the edges (**Fig.10**).

There is always a problem with the seams. The texture match is very important on the two other sides of the seam. Fortunately Bodypaint is a perfect tool to fix the seams. Click the button you can see in the image. It means that now the software doesn't care about the cuts inside the UV map, it just paints on the surface. Be careful the Clone tool copies the perspective of the textures, not the 2D version. It can cause the texture to become stretched or warped. The best way to use this tool is to place the camera almost in front of the surface and copy the texture using weaker settings **(Fig.11).**

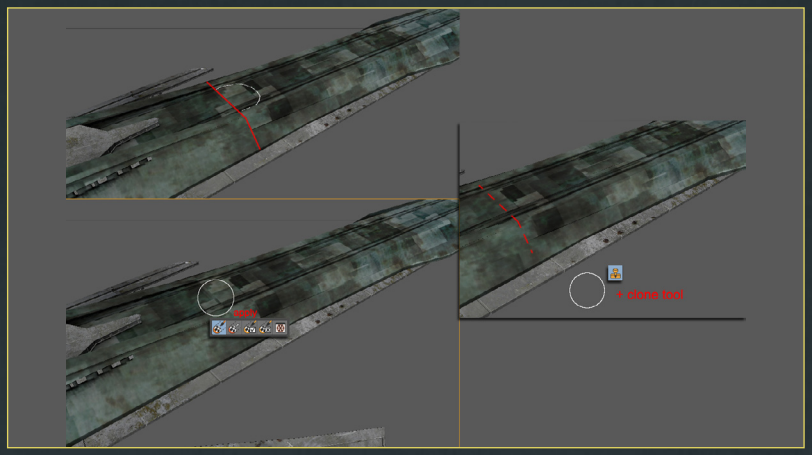


Fig 11

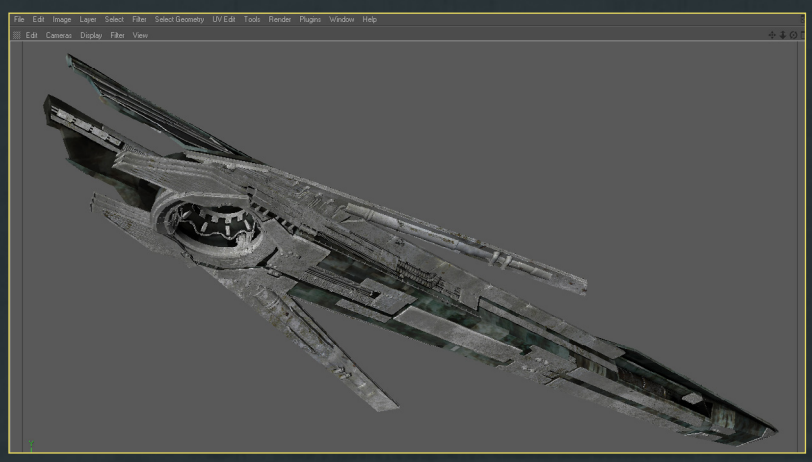
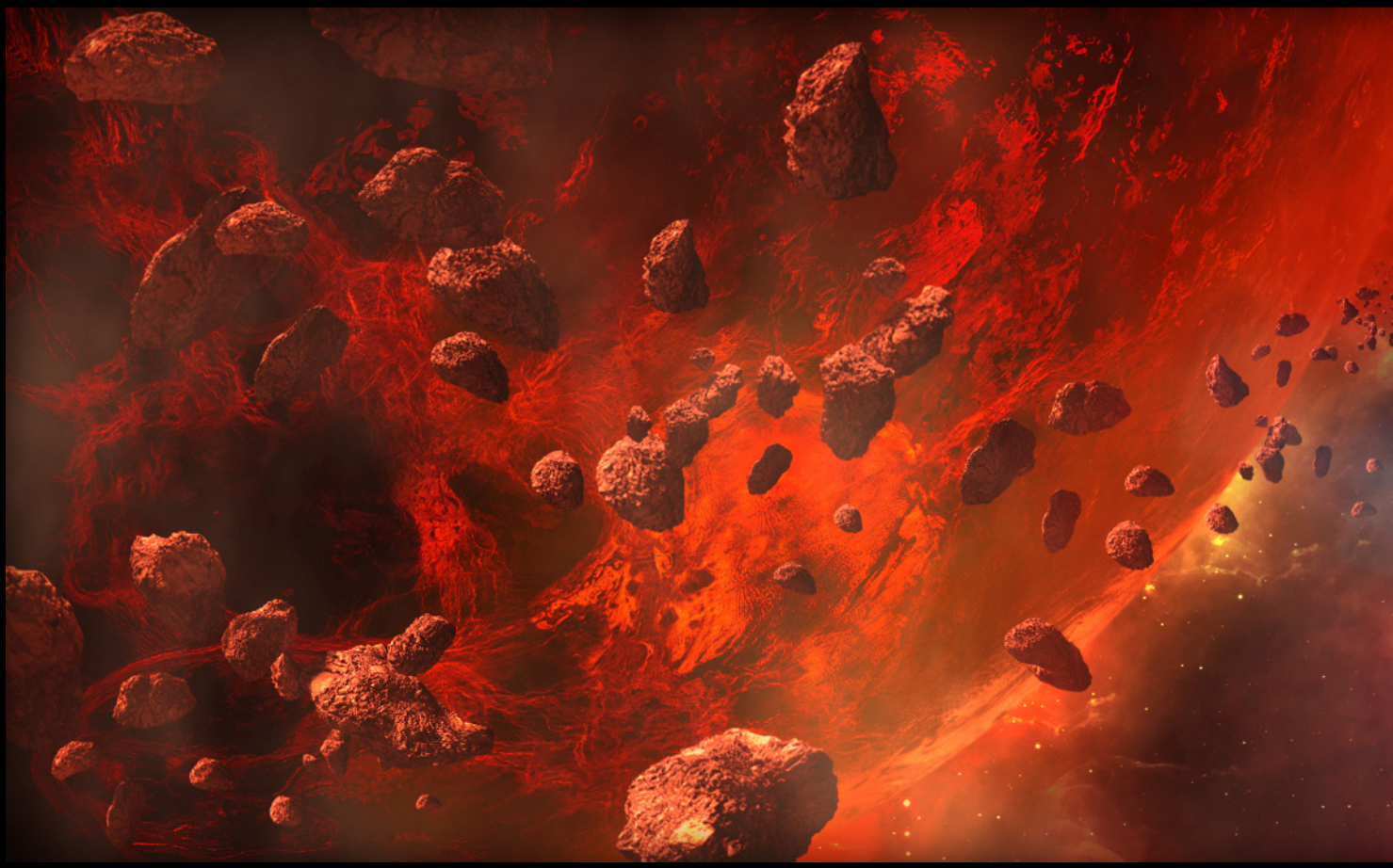


Fig 12

This is a bit like painting the spaceship's texture. Of course if you want set it to an environment that can be done in post-production (**Fig.12**).

To finish this tutorial let's look at a possible final image. The composition was done in Photoshop. I hope that you have learnt more about Cinema4D and Bodypaint. Very best wishes and thank you for reading my tutorial series (**Fig.13**).



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